UNITED STATES
CLIMATE
ALLIANCE

2023 Annual Report

All Hands on Deck

Securing America's Net-Zero Future with State-Led, High-Impact Action

UNITED STATES
CLIMATE
ALLIANCE

For more information, see www.usclimatealliance.org.

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HIGHLIGHTING SOLUTIONS
across the alliance

In September, New York Governor Kathy Hochul, Washington Governor Jay Inslee, and Maine Governor Janet Mills unveiled new, Alliance-wide building decarbonization targets at Climate Week NYC.

Photo Credit: U.S. Climate Alliance

Message from the Co-Chairs

This year, we've seen it all: unprecedented firestorms and wildfire smoke, extreme heat and drought, severe wind and hail, and catastrophic flooding. No state, no community has been spared. The unthinkable is swiftly becoming our new normal. **The climate crisis is here — and this is America's all-hands-on-deck moment.**

Fortunately, from coast to coast, the U.S. Climate Alliance and our 25 governors are answering the call. We are confronting this crisis head on, and we're doing it together. As you'll read in the pages that follow, after more than six years since we launched, our resolve and our commitment have never been stronger. And most importantly, our climate actions have never been more bold or impactful.

Our states and territories are advancing and accelerating new policies, programs, and investments across sectors, setting net-zero targets, developing economy-wide cap-and-invest programs, and tackling climate pollution from harder-to-decarbonize sectors, like buildings and industry. We are working with one another and with our local communities to maximize the climate benefits of new and historic federal funding and programs and we're using our collective voice to raise the floor of federal ambition and support strong federal climate action.

This year alone, as a coalition, we identified more than 20 specific federal climate actions to support states and accelerate America's transition to a net-zero future — and we have rolled up our sleeves with the Biden administration to deliver. We also made our own new landmark commitments, including setting an ambitious goal of collectively quadrupling heat pump installations by 2030, alongside a series of other new actions to eliminate emissions from buildings. Notably, we welcomed the governors of Arizona and Guam to our coalition and new governors from Hawai'i, Massachusetts, Oregon, Maryland, and Pennsylvania, who continued their states' membership in the Alliance. And for the first time in our history, we expanded our coalition's leadership with a new five-member executive committee, which includes non-founding-state members serving as co-chair and co-chair elect for the first time.

The result of all this work is real progress for America. In fact, as you'll see in this report, our coalition reduced our collective net greenhouse gas emissions by 18 percent between 2005 and 2021, and we are now on track to meet our near-term climate goal, by reducing collective greenhouse gas emissions 26 percent below 2005 levels by 2025. But the benefits are much bigger than emissions reductions. During that same window, the economies in our states and territories grew by nearly 30 percent.

We're also improving the health of our residents, creating jobs, and protecting communities. Compared to the rest of the country, our members in 2023 continued to employ more workers in the renewable energy and energy efficiency sectors and achieve lower levels of dangerous air pollutants. Alliance states and territories are also preparing more effectively for extreme weather events and building more resilience to the impacts of climate change.

We have a long road ahead, but we know that if we continue to work with each other and in coordination with the federal government, there is a clear pathway to achieve our 2030 and 2050 climate targets — and build a better, brighter future for all. Let's get it done.

Jay Inslee
Governor, Washington

Janet Mills
Governor, Maine

HIGHLIGHTING SOLUTIONS
across the alliance

In April, Wisconsin Governor Tony Evers established the Green Ribbon Commission on Clean Energy and Environmental Innovation, which will consult with Tribal Nations and other key stakeholders to support environmental and clean energy solutions across the state.

Photo Credit: Office of Governor Wisconsin Tony Evers

Executive Summary

The United States Climate Alliance is a bipartisan coalition of governors committed to securing America's net-zero future by advancing state-led, high-impact climate action (Map ES-1). It is clear that bold action to address the climate crisis cannot wait as Americans experienced a record-breaking number of billion-dollar extreme weather and climate-related disasters this past year. Deadly wildfires devastated communities, unprecedented wildfire smoke blanketed the nation with dangerous levels of air pollution, record heat affected nearly 100 million Americans, and extreme rainfall caused catastrophic flooding. The current crisis only highlights the urgency of the Alliance's work.

As the global community comes together this year to take stock of its progress in fulfilling the goals of the Paris Agreement, the Alliance is doing the same. This report assesses Alliance members' progress toward their collective climate goals and outlines the high-impact actions that states and territories can take, together and in partnership with the federal government, to bridge the emissions gap, achieve the coalition's emissions targets, deliver improved health and economic benefits, and ensure communities are prepared to withstand extreme weather and climate events that will continue to worsen with increased warming.

As the global community comes together this year to take stock of its progress in fulfilling the goals of the Paris Agreement, the Alliance is doing the same.

Reflecting on 2023

The Alliance grew and diversified its membership this year, welcoming seven new governors into its ranks following the 2022 midterm elections. Governor Katie Hobbs made Arizona the newest state to join the coalition, while Governors Josh Green (Hawai'i), Maura Healey (Massachusetts), Tina Kotek (Oregon), Wes Moore (Maryland), and Josh Shapiro (Pennsylvania) all continued their states' membership in the Alliance. Earlier in the year, Governor Lou Leon Guerrero made Guam the second U.S. territory to join the coalition. Since 2017, the Alliance has grown to include 25 governors representing every

Arizona
Gov. Katie Hobbs

Hawai'i
Gov. Josh Green

Massachusetts
Gov. Maura Healey

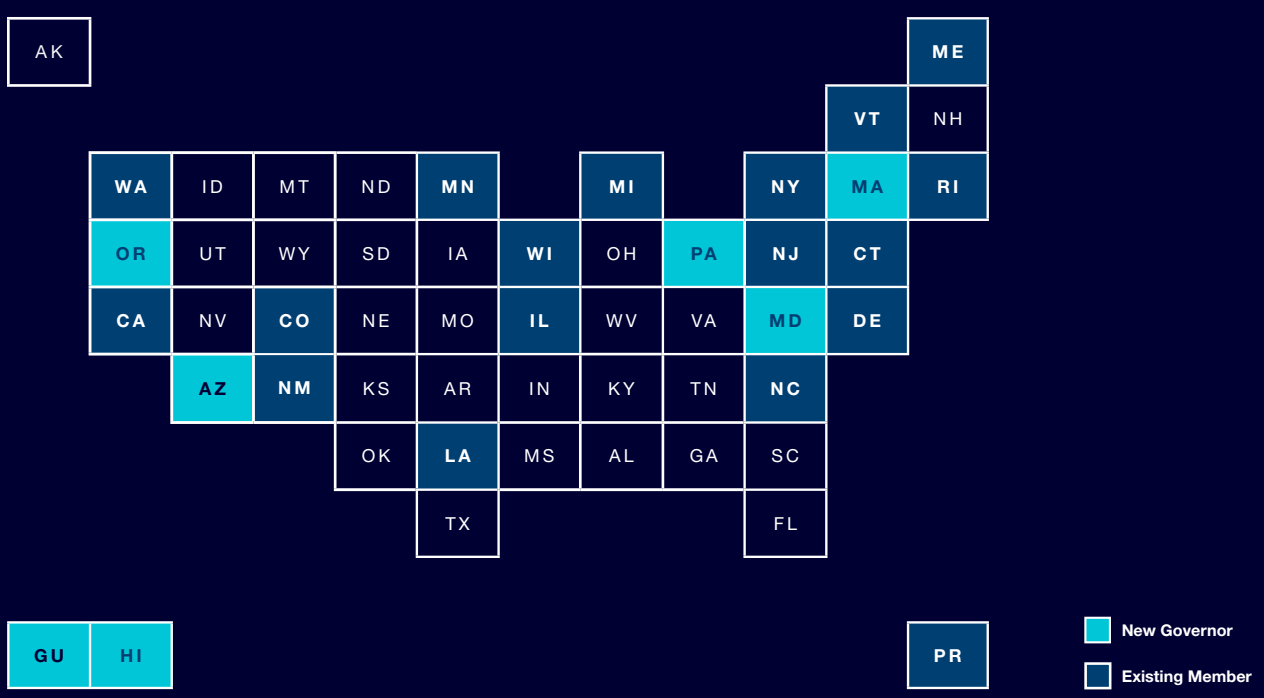
Oregon
Gov. Tina Kotek

Maryland
Gov. Wes Moore

Pennsylvania
Gov. Josh Shapiro

Guam
Gov. Lou Leon Guerrero

MAP ES-1. U.S. Climate Alliance Members



region of the country. Alliance members now represent 59 percent of U.S. gross domestic product (GDP), 55 percent of the U.S. population, and 43 percent of net greenhouse gas (GHG) emissions.

In 2023, Alliance members propelled forward some of the boldest and widest-ranging climate actions yet in the face of extreme, climate change-driven weather events. At the same time, Alliance states and territories are working with one another and with local communities to maximize the climate benefits of new and historic federal funding and programs. Alliance governors also continued to use their collective voice to raise the floor of federal ambition and support strong federal climate actions by the Biden administration, including through stringent federal regulations, effective climate program implementation, and development of up-to-date climate tools and resources.

Photo credit: Errol Ebanks, Delaware DNREC at Climate Bill Signing

Measuring our progress

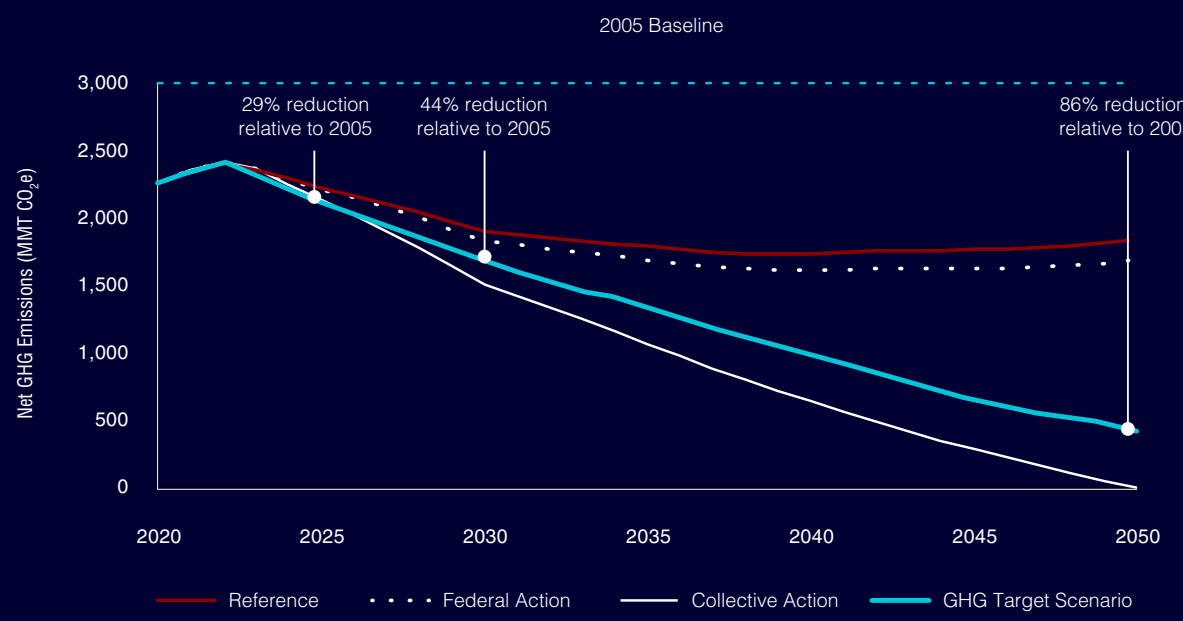
The Alliance reduced its collective net GHG emissions by 18 percent between 2005 and 2021 (the latest year with complete data), continuing the coalition's trend of declining emissions over 15 years. Alliance members also continued to show the nation that reducing GHG emissions can go hand-in-hand with growing the economy, as evidenced by the nearly 30 percent increase in collective GDP in Alliance states and territories during the same period that they meaningfully drove down GHG emissions.

The Alliance has made real progress toward achieving its 2025 GHG emissions reduction target, thanks to state policies and historic federal funding and programs that have been enacted over the past two years. New independent analysis shows that the Alliance is now on track to meet its 2025 GHG emissions reduction goal, with the Alliance currently projected to reduce collective GHG emissions 26 percnt below 2005 levels by 2025.

This new analysis also shows that by working with one another — and in coordination with the federal government — Alliance members can meet collective emissions reduction goals of reducing net GHG emissions to at least 50-52 percent by 2030 and reaching overall net-zero GHG emissions no later than 2050, both below 2005 levels. Furthermore, if all Alliance members put into place policies and programs to meet their individual GHG targets, collective GHG emissions would fall by at least 44 percent below 2005 levels by 2030 and 86 percent by 2050 (Figure ES-1). Importantly, this analysis shows that investing in a net-zero future can lead to significant net benefits across Alliance states and territories, producing monetary savings from improved public health, reduced spending on fossil fuels, and avoided climate damages that significantly outweigh the costs.

The policies and programs already put in place by Alliance members to generate electricity from cleaner sources, increase the energy efficiency of homes and businesses, and get cleaner and more efficient vehicles on the road are delivering important benefits to communities and businesses across the coalition. In the face of more frequent and more dangerous extreme weather events, Alliance members are also preparing more effectively for climate impacts and executing more pre-disaster planning compared with the rest of the United States.

FIGURE ES-1. Achieving individual GHG targets will put the Alliance's climate goals within reach, yet additional action is needed across the economy to secure a net-zero future.



Continuing to advance bold climate action

Together, Alliance members are deploying a series of bold, high-impact actions — centered around equity, environmental justice, and a just transition — to cut GHG emissions, safeguard public health, grow the economy, and build climate resilience. For example, over the past year, Alliance members have:

- Set new GHG emissions reduction targets to guide their climate priorities, drafted climate action plans that map out how to achieve those targets, and engaged with communities and stakeholders to bolster their climate frameworks.
- Continued to expand electricity distribution and transmission systems and deploy more zero-carbon energy sources to support electrification efforts across the economy.
- Made residential and commercial buildings less polluting and more energy efficient, including collectively committing to quadruple heat pump installations across the coalition by 2030.
- Increased their focus toward addressing industrial sector emissions and investing in innovative and competitive domestic manufacturing.
- Expanded access to cleaner and lower-cost vehicles and charging infrastructure while reducing vehicle miles traveled (VMT).
- Established equitable and inclusive systems and tools to facilitate the transition of local economies toward decarbonization.
- Developed and deployed equitable state plans to help prevent climate-related disasters and ensure communities are prepared to withstand and recover from future extreme events.
- Continued to plan for, incentivize, and deploy natural climate solutions in partnership with rural and agricultural communities.
- Incentivized cost-effective emissions reductions by setting prices or caps on carbon pollution as well as expanded the use of the social cost of greenhouse gases (SC-GHG) to help inform policy decision-making.

Partnering with the federal government to speed America's net-zero transition

While Alliance members had already been developing and implementing crucial climate policies and programs in their state capitals, passage of the *Inflation Reduction Act* (IRA) — paired with significant climate infrastructure investments passed by Congress in 2021 — marked the beginning of a transformative chapter in U.S. climate action. As primary implementers of the IRA, states and territories are essential to delivering on its promise and took important steps this year to harness its historic investments to build healthier communities and tackle the climate crisis.

Alliance governors also used their collective voice to raise the floor of federal ambition. The coalition kicked off the year by calling on the Biden administration to advance a series of additional federal climate actions that will support states and accelerate the nation's transition to a net-zero future. In a letter to President Biden, the Alliance laid out more than 20 specific actions the federal government can take to cut emissions across sectors, and throughout the year, continued to partner closely with the administration to support effective deployment of federal executive authority on climate. The Alliance's engagement included providing detailed recommendations on the development of federal programs, policies, and regulations; establishing innovative new partnerships; and facilitating state-federal convenings to collaborate on, scale up, and inform ambitious climate solutions across government.

Photo credit: U.S. Climate Alliance.

Photo Credit: U.S. Climate Alliance

Looking ahead to 2024 and beyond

As unprecedented wildfire smoke, record heat, and catastrophic flooding swept across the country this year, Alliance governors were reminded of the crisis facing their states and territories and the urgency of their work. More action is needed across all sectors of the economy to make the coalition's long-term collective climate goals a reality and to ensure that all communities are more resilient to future extreme weather events expected under current warming conditions. Doing so will deliver even more health and economic benefits above and beyond what Alliance members have already achieved. With this in mind, and with renewed resolve and focus, Alliance members will continue working with one another and the federal government to take the next generation of actions to ensure a safe and healthy planet for all.

HIGHLIGHTING SOLUTIONS
across the alliance

In July, Illinois Governor JB Pritzker celebrated the opening of a new Lion Electric factory in Joliet, Illinois. The 900,000-square-foot facility will produce electric school buses.

Photo Credit: Office of Illinois Governor JB Pritzker

Introduction

The United States Climate Alliance is a bipartisan coalition of governors committed to securing America's net-zero future by advancing state-led, high-impact climate action (Box 1). This past year has made it clear that bold action to address the climate crisis cannot wait, as deadly wildfires devastated communities,[1] record heat affected nearly 100 million Americans,[2] extreme rainfall caused catastrophic flooding,[3] and unprecedented wildfire smoke blanketed the nation with dangerous levels of air pollution.[4] As of September 2023, the United States had already experienced a record-breaking number of extreme weather and climate-related disasters that caused over $1 billion in damages each.[5] This summer marked a particularly significant turning point, as the planet experienced its highest average temperature since global records began in 1880.[6] Our country is not alone — the worsening impacts of climate change are being felt across the globe.[7] Weather events of this severity, typically expected once a decade or century, are quickly becoming a regular part of our reality.

The current crisis only highlights the urgency of the Alliance's work. Thankfully, states and territories have led on climate action for decades and helped accelerate the clean energy transition, begin transforming our economy, and raise the ambition of the private sector and the world. For example, state renewable portfolio standards drove about half of the growth of clean energy since 2000,[8] while state-led methane regulations set the stage for ambitious action by the Biden administration to tackle oil and natural gas methane emissions. States' use of emerging technologies to identify methane leaks laid the foundation for what will soon be a global network of satellites, and as states ramped up their clean vehicle standards, vehicle manufacturers have announced their own electrification targets.[9] Already, historic investments under the *Infrastructure Investment and Jobs Act* (IIJA) and *Inflation Reduction Act* (IRA) are bolstering the Alliance's capacity to build on these efforts in the years ahead.

As the global community comes together this year to take stock of its progress in fulfilling the goals of the Paris Agreement,[10] the Alliance is doing the same. This report assesses Alliance members' progress toward meeting their collective climate goals and outlines the high-impact actions that states and territories can take, together and in partnership with the federal government, to fill the emissions gap, achieve the coalition's emissions targets, deliver improved health and economic benefits, and ensure communities are prepared to withstand extreme weather and climate events that will continue to worsen with increased warming.

BOX 1

Alliance Member Commitments

Alliance members are working to achieve the Paris Agreement's goal of keeping temperature increases below 1.5 degrees Celsius through four key commitments:

1. Reducing Emissions

Reducing collective net greenhouse gas (GHG) emissions at least 26-28 percent by 2025 and 50-52 percent by 2030, both below 2005 levels, and collectively achieving overall net-zero GHG emissions as soon as practicable, and no later than 2050.

2. Accelerating Action

Accelerating new and existing policies to reduce climate pollution, build resilience to the impacts of climate change, and promote clean energy deployment at the state and federal levels.

3. Centering Equity

Centering equity, environmental justice, and a just economic transition in their efforts to achieve their climate goals and create high-quality jobs.

4. Tracking Progress

Tracking and reporting progress to the global community in appropriate settings, including when the world convenes to take stock of the Paris Agreement.

Photo credit: U.S. Climate Alliance

Reflecting on 2023

The Alliance grew and diversified its membership this year, welcoming seven new governors into its ranks. Governor Katie Hobbs made Arizona the newest state to join the coalition, while Governors Josh Green (Hawai'i), Maura Healey (Massachusetts), Tina Kotek (Oregon), Wes Moore (Maryland), and Josh Shapiro (Pennsylvania) all continued their states' membership in the Alliance. Earlier in the year, Governor Lou Leon Guerrero made Guam the second U.S. territory to join the coalition. Alliance members now represent 59 percent of U.S. GDP, 55 percent of the U.S. population, and 43 percent of net GHG emissions in the United States.

Since the Alliance was launched in 2017, it has been led by the governors of the coalition's founding states — California, New York, and Washington. In recognition of the coalition's growth over the past six years, both in size and representation, the Alliance took another step forward in its work by strengthening and expanding its governing body. In 2023, the Alliance announced the creation of a new, five-member executive committee and welcomed the addition of two non-founding-state members to its leadership — Maine and New Mexico. Our coalition came together in the spring to elect Washington Governor Jay Inslee and Maine Governor Janet Mills to serve as the first co-chairs of the Alliance under its new governance structure. They joined California Governor Gavin Newsom, New York Governor Kathy Hochul, and New Mexico Governor Michelle Lujan Grisham on the Alliance's executive committee charged with overseeing the strategic direction of the coalition. The governors will serve in these roles until spring of 2024, kicking off an annual election cycle that will bring new ideas and strategic priorities into focus for the Alliance each year.

In the face of 2023's extreme, climate change-driven weather events, Alliance members propelled forward some of the boldest and widest-ranging climate actions yet. Alliance states and territories are setting net-zero targets, developing economy-wide cap-and-invest programs, and beginning to tackle harder-to-decarbonize sectors like buildings and industry. At the same time, these states and territories are working to maximize the climate benefits of new and historic federal funding and programs. Alliance governors also continued to use their collective voice to raise the floor of federal ambition and support strong federal climate actions by the Biden administration, including by adopting stringent federal regulations, implementing effective climate programs, and developing up-to-date climate tools and resources.

In light of the significant progress being made at both state and federal levels, the Alliance commissioned an analysis to understand how far existing policies and programs will move the coalition toward its existing GHG emissions reduction targets and what additional federal and state actions are needed. This analysis also assessed the mitigation costs, health benefits, and climate benefits associated with achieving a net-zero future.

HIGHLIGHTING SOLUTIONS
across the alliance

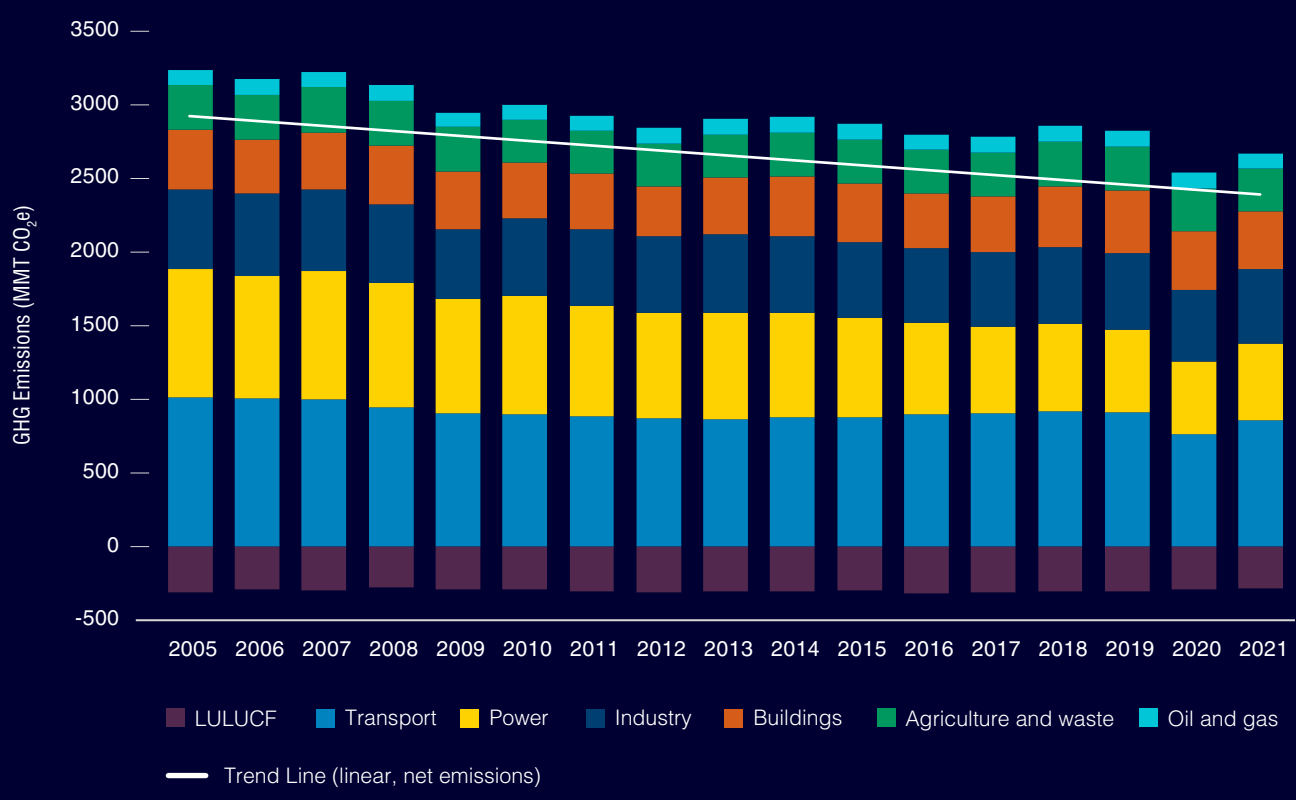
In August, Maryland Governor Wes Moore welcomed the U.S. Climate Alliance Secretariat to the Maryland State House. Throughout 2023, Maryland advanced key climate actions across the buildings, transportation, and resilience sectors, among others.

Photo Credit: U.S. Climate Alliance

Measuring Our Progress

The Alliance reduced its collective net GHG emissions by 18 percent between 2005 and 2021 (the latest year with complete data), continuing the coalition's trend of declining emissions over 15 years (Figure 1).[11] *Collective emissions between 2020 and 2021 increased 6 percent as the nation recovered from the economic downturn caused by the height of the COVID-19 pandemic. While this bump in GHG emissions was expected, it demonstrates clearly how important it is for Alliance members — and the nation — to accelerate development and implementation of bold climate policies and programs that will result in lasting reductions.*

FIGURE 1. The Alliance's collective net GHG emissions decreased an estimated 18 percent between 2005 and 2021.

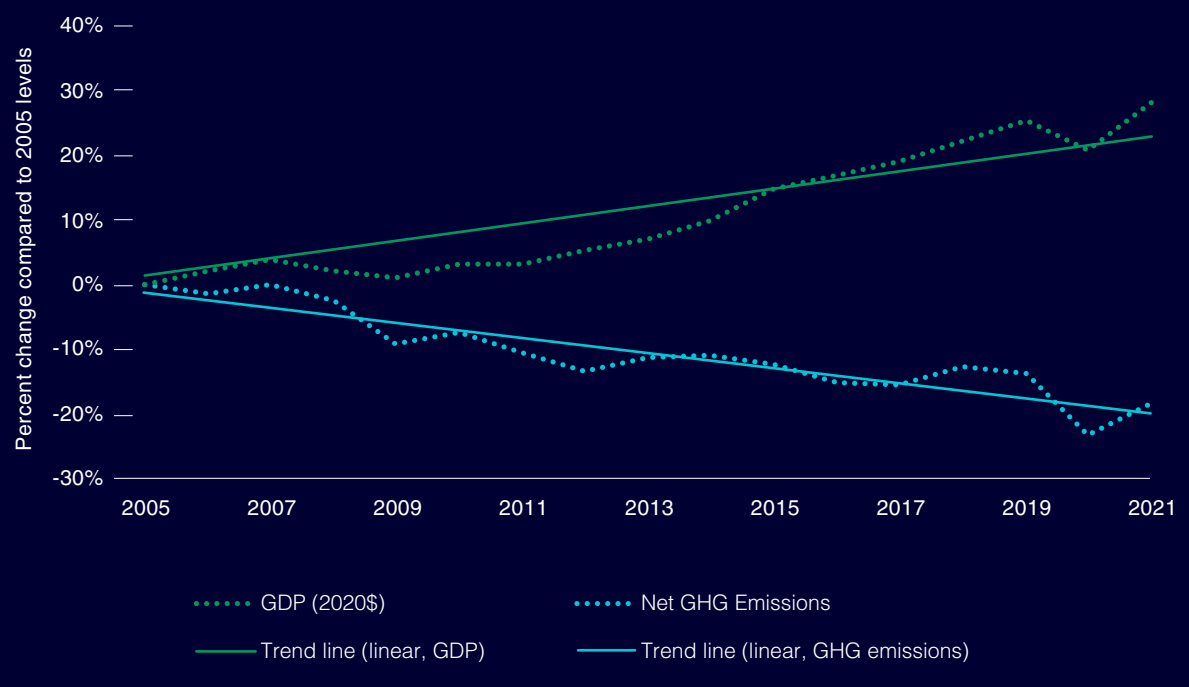


Source: Rhodium Group Climate Deck

Importantly, reducing GHG emissions goes hand-in-hand with growing the economy, as evidenced by the Alliance's track record over this same time period (Figure 2). For more than 15 years, Alliance members have successfully decoupled economic growth and GHG emissions, realizing a 30 percent boost in gross domestic product (GDP) while achieving a 20 percent reduction in net emissions.

Photo credit: Office of New Jersey Governor Phil Murphy

FIGURE 2. Between 2005 and 2021, Alliance members cut their GHG emissions while continuing to grow their economies.



Source: Rhodium Group Climate Deck and Bureau of Economic Analysis

Additional key trends between 2005 and 2021 include:

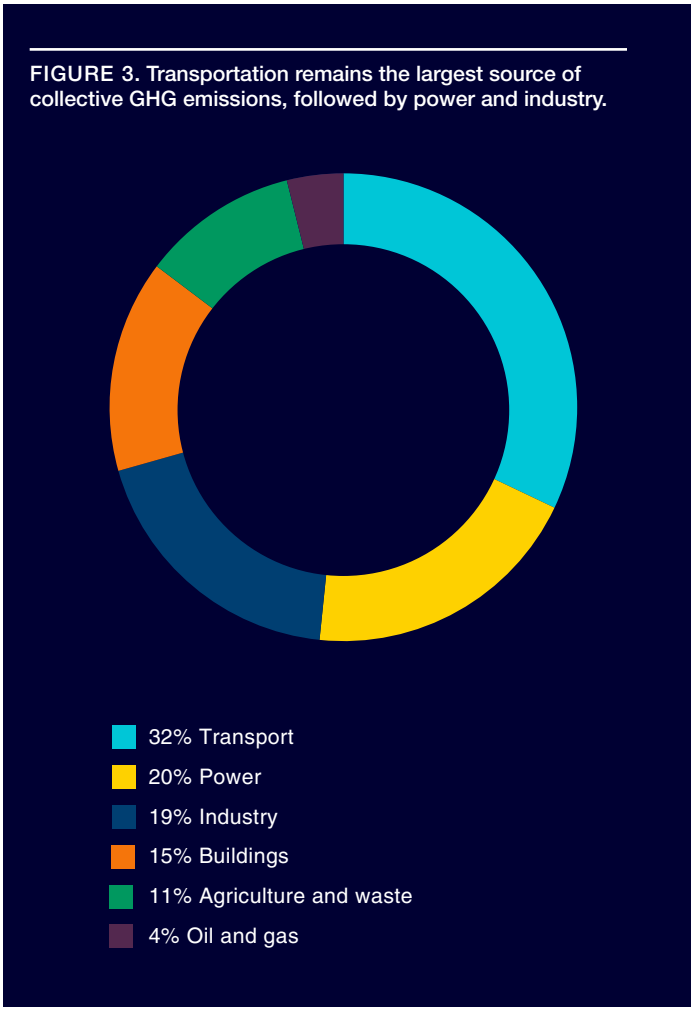
- **Transportation remained the largest source of the Alliance's collective GHG emissions by far, representing nearly one-third of total emissions (Figure 3).** The transportation sector also saw the largest rebound in emissions following the height of the pandemic — a 13 percent increase between 2020 and 2021 — as demand for travel resumed. This data suggests additional action is needed to increase the use of more efficient and zero-emission vehicles, low-carbon fuels, and multimodal options.

- **More than 45 percent of electricity generated across the Alliance comes from carbon-free sources, compared to only one-third in the rest of the United States.**[12] Between 2020 and 2021, GHG emissions from electricity generation grew by 6 percent in Alliance states and territories. This was largely driven by a 19 percent increase in coal-fired generation, in line with national trends. However, coal-fired generation in 2021 remained below pre-pandemic levels, with total power sector emissions down 40 percent from 2005 levels.

- **Industrial sector GHG emissions decreased by 7 percent.** Because the industrial sector remains a significant source of collective emissions, this trend will need to accelerate over the next few years. As noted in last year's Annual Report, policy momentum in this sector is quickly growing across Alliance states and territories, as members look to build on their success in implementing nation-leading regulations that reduce emissions of short-lived climate pollutants (SLCPs) like hydrofluorocarbons (HFCs) and methane from oil and natural gas systems.

- **GHG emissions from direct energy use in residential and commercial buildings remain largely unchanged since 2005.** While the energy efficiency of new appliances and equipment has improved over time, thanks in part to Alliance members' adoption of efficiency standards for products not yet covered by federal standards, the number and relative size of buildings have both increased.[13] Buildings and their heating and cooling equipment also have long lifetimes, which can delay the adoption of more efficient equipment needed to decarbonize this sector.

FIGURE 3. Transportation remains the largest source of collective GHG emissions, followed by power and industry.



Source: Rhodium Group Climate Deck

To address these challenges, the Alliance announced in September a series of new collective commitments to eliminate emissions from buildings, including collectively quadrupling the number of heat pump installations in Alliance states and territories by the end of the decade.

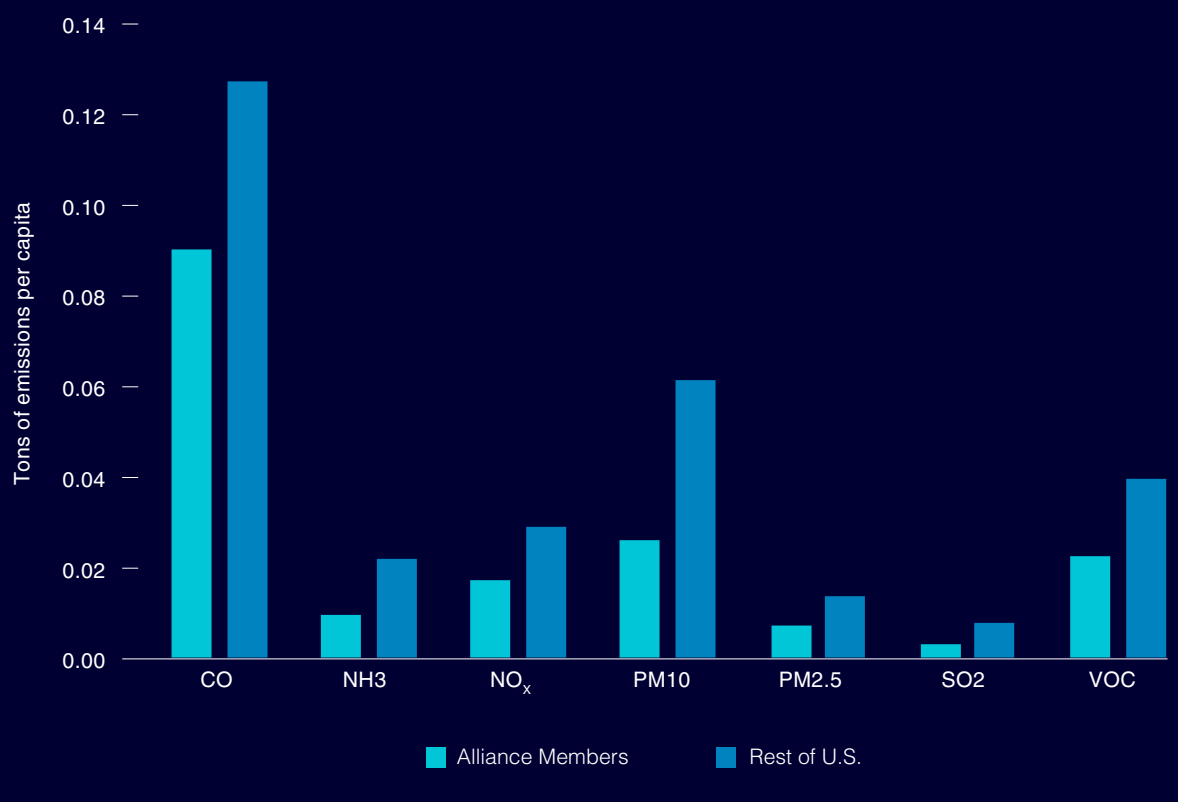
- **GHG emissions sequestered from natural & working lands (NWL) across the Alliance have fallen by 10 percent since 2005.**[14] In 2021, NWLs sequestered carbon equivalent to 11 percent of the Alliance's gross collective GHG emissions. Given the importance of this sector in ultimately achieving net-zero emissions, Alliance members are prioritizing actions that conserve and enhance resilient natural climate solutions, while improving data and tools to better understand the critical role that NWLs will need to play in achieving and sustaining net-zero GHG emissions.

Alliance members generate public health and economic co-benefits

While more needs to be done, the policies and programs already put in place by Alliance members to generate electricity from cleaner sources, increase the energy efficiency of homes and businesses, and get cleaner and more efficient vehicles on the road is delivering important benefits to families and communities. Compared to the rest of the country, Alliance members in 2023 continued to:

- Employ more workers in the renewable energy and energy efficiency sectors.[15]
- Achieve lower levels of dangerous air pollutants that can cause difficulty breathing and carry increased risk of asthma and heart disease, among other conditions (Figure 4).[16]

FIGURE 4. Alliance members generate lower levels of harmful air pollutants per capita than the rest of the country (2021).

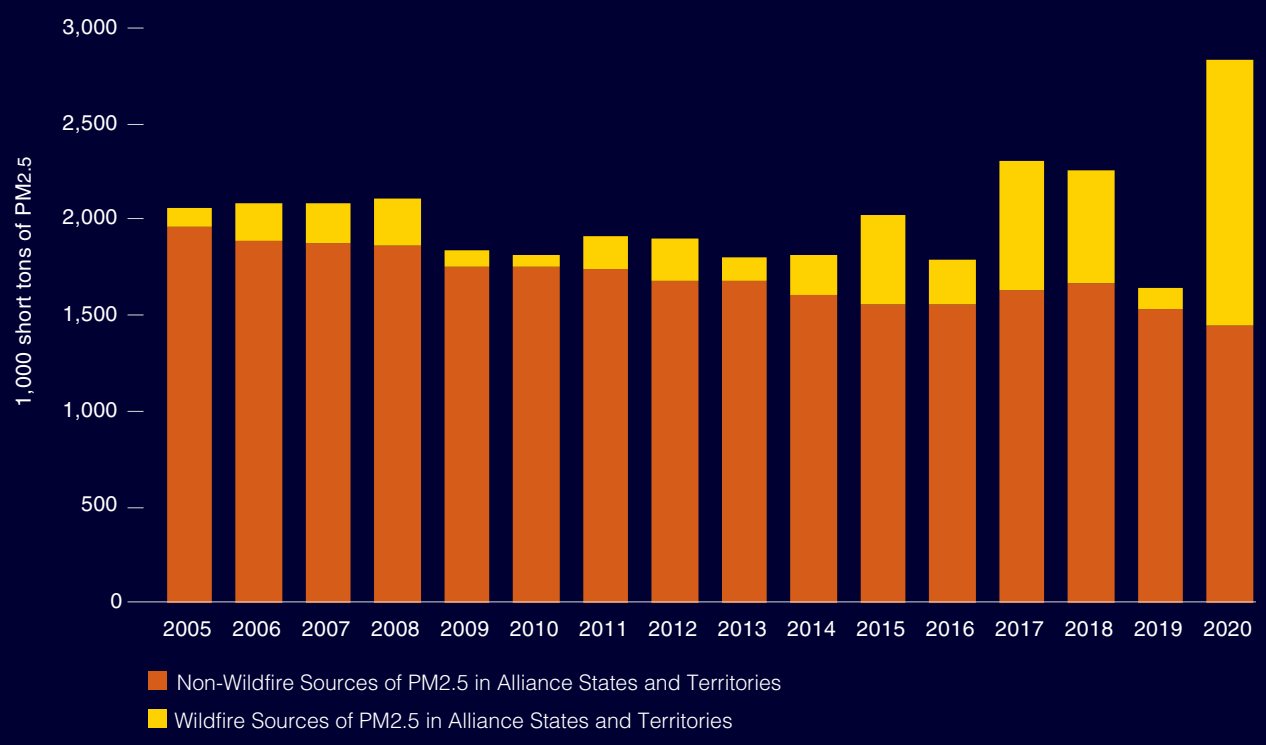


Source: U.S. Environmental Protection Agency
Note: Data reflects air pollution from agriculture, fuel combustion, industrial processes, transportation, and waste sources. This data does not include air pollution from wildfire or prescribed burn sources. Chart includes data for Puerto Rico. Guam-specific data was not available.

Wildfires put air quality improvements increasingly at risk

Significant progress has been made to reduce air pollution in the Alliance and across the United States since 2005. However, as wildfires become more frequent due to climate change,[17] improvements made to harmful air pollution levels are being put at risk. In recent years, wildfires have generated a growing share of primary PM2.5 emissions emitted directly into the air (Figure 5), which have been linked to respiratory and heart issues as well as premature death in people with existing heart or lung disease.[18]

FIGURE 5. Major wildfires can undermine improvements in harmful air pollution.



Source: U.S. Environmental Protection Agency
Note: Chart includes data for Puerto Rico. Guam-specific data was not available. Data represents primary air pollution levels.

Alliance members are preparing more effectively for climate impacts

As extreme weather events and climate impacts become more frequent and more dangerous, Alliance members are preparing for them more effectively and executing more pre-disaster planning compared to the rest of the country (Figure 6). This includes developing statewide adaptation plans, identifying agency-specific roles, and supporting local adaptation planning and implementation.

Photo credit: Office of Louisiana Governor John Bel Edwards

FIGURE 6. Alliance members are creating adaptation and resilience plans that help drive implementation and pre-disaster preparation on the ground to a much greater degree than other states.

Source: Georgetown Climate Center

Mapping a collective pathway to net zero

Together, Alliance members have made progress to cut GHG emissions and reduce air pollution. To assess the largest opportunities for Alliance members to work together and with the federal government to build on this progress and achieve collective long-term climate goals, the Alliance commissioned Energy and Environmental Economics (E3) to update its last analysis conducted for the coalition's 2021 Annual Report. This updated analysis incorporates major advances in state and federal climate legislation and regulations over the past two years and assesses where the Alliance's collective GHG emissions are headed through 2050 under four scenarios (specific assumptions can be found in Appendix 1).

Key Takeaways

E3's analysis shows that the Alliance has made real progress toward achieving its 2025 GHG emissions reduction target, thanks to ambitious state policies and historic federal investments and programs enacted over the last two years. **The coalition is now on track to meet its 2025 GHG emissions reduction goal, and is currently projected to reduce collective GHG emissions 26 percent below 2005 levels by 2025.**

The new analysis also shows that by working with one another — and in coordination with the federal government — there is a clear pathway for Alliance members to meet their collective goals of reducing net GHG emissions at least 50-52 percent by 2030 and achieving overall net-zero GHG emissions by 2050, both below 2005 levels. Furthermore, if all Alliance members put into place policies and programs to meet their existing individual GHG targets, collective GHG emissions would fall at least 44 percent by 2030 and 86 percent by 2050. Importantly, the analysis shows that the economic, health, and social benefits delivered by investing in a net-zero future vastly outweigh any short-term upfront costs.

Modeled Scenarios

Reference Case
This scenario reflects final statutory and regulatory measures in Alliance member states and territories and at the federal level as of June 15, 2023, including the IRA and IIJA, but no new or currently proposed policies.

Federal Action
This scenario builds on the Reference Case and incorporates additional federal regulatory actions to further reduce GHG emissions, including emissions standards for power plants, vehicles, and train locomotives; aviation decarbonization targets; and building efficiency standards.

Collective Action
This scenario further builds on the Federal Action scenario and layers in additional policy actions that Alliance members and the federal government could collectively take to achieve emissions reductions of 50-52 percent by 2030 and net-zero GHG emissions by 2050, both below 2005 levels.

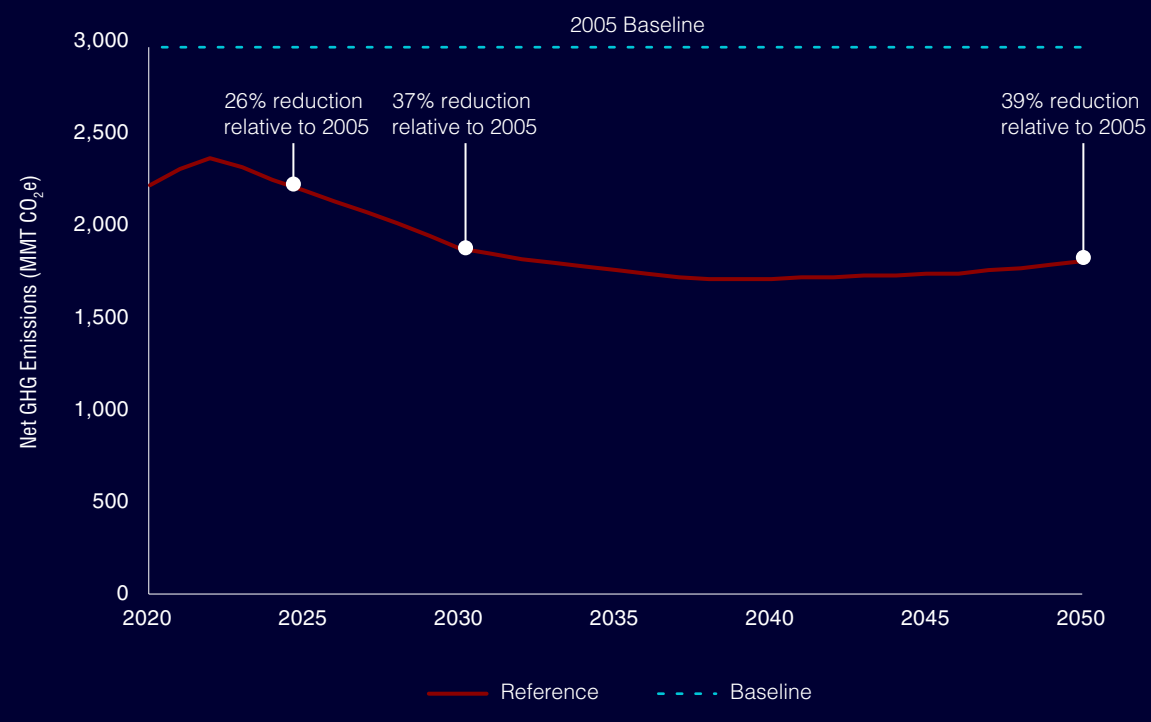
GHG Targets
This scenario builds on the Reference Case and assumes Alliance members achieve their individual GHG emissions reduction goals.

Results in detail

The Reference Case shows that the policies already deployed by Alliance members will drive down collective GHG emissions 26 percent below 2005 levels by 2025 — achieving the Alliance's collective 26-28 percent GHG reduction target for that year — and 37 percent by 2030 (Figure 7). These results illustrate the significant impact that the last two years of state and federal action has had on the Alliance's collective GHG emissions trajectory, achieving 3 percent deeper reductions in 2025 and 10 percent deeper reductions in 2030 compared to the Alliance's last analysis.[19] In this year's Reference Case, emissions decline primarily due to power sector decarbonization and significant zero-emission vehicle (ZEV) adoption, a policy environment enabled by a growing number of Alliance members with ambitious clean energy standards and ZEV sales regulations and bolstered by incentives in the IRA.

After 2030, these emissions reductions become less dramatic, as federal tax credits begin to phase out and natural carbon sinks decline due to expected increases in disturbance from fire, disease, pests, and changing climate conditions,[20] eventually leading to a rebound to 2030 levels by midcentury, absent additional action. It is worth noting that the Reference Case is a conservative estimate of the progress that Alliance members are likely to make, given that proposed policies, policies without implementing regulations, and economy-wide policies are excluded. This means the Reference Case is not reflective of, for example, the Advanced Clean Cars II (ACC II) regulations currently being pursued by several states, 100 percent clean energy standards that do not yet have implementing mechanisms, or the explicit impacts of state-level cap-and-invest programs. Additional uncertainty also exists around a number of factors, such as future technology costs and fossil fuel prices, consumer behavior changes, and the ability for the nation's lands to sequester carbon. Still, the rebound in emissions post-2030 in the Reference Case illustrates the importance of continued and increasingly ambitious actions by both Alliance members and the federal government.

FIGURE 7: Existing policies in Alliance states and territories, bolstered by recent federal actions and investments, put the Alliance on track to meet its 2025 GHG target, with additional action needed to get on a pathway to net zero.



Note: All emissions are reported using 100-year global warming potential values from the IPCC's 5th Assessment Report.

Additional federal actions can further reduce GHG emissions

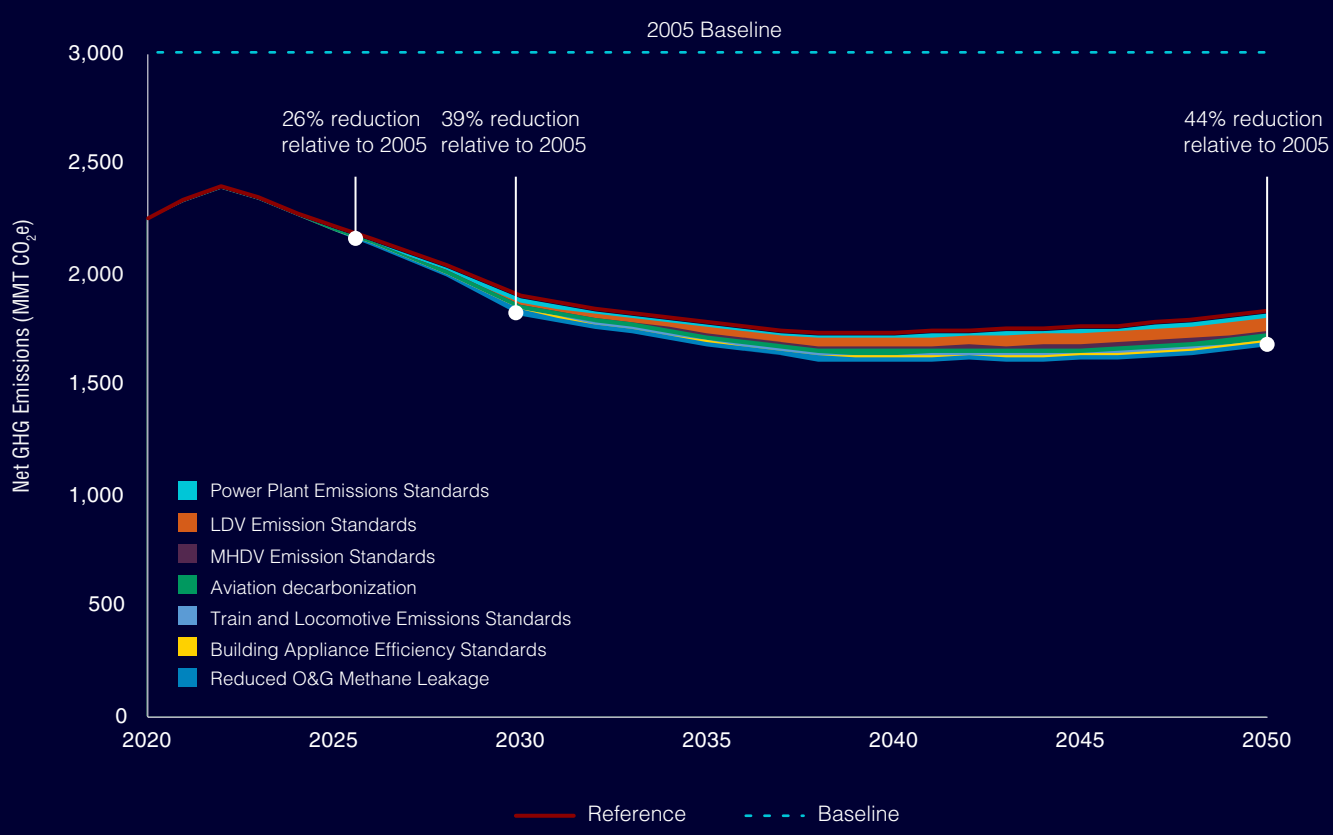
Although the IRA and IIJA make meaningful investments in U.S. climate action, continued prompt, effective deployment of federal executive authority is essential to put our nation on a path to meet our 2030 and 2050 emissions reduction goals.[21] The Federal Action scenario models the impacts of several additional actions and goals being considered by the U.S. Environmental Protection Agency (EPA), the U.S. Department of Energy (DOE), the U.S. Department of Transportation (DOT), and other federal agencies. These include:

- Currently proposed power plant emissions standards.
- Currently proposed light-duty vehicle (LDV) and medium- and heavy-duty vehicle (MHDV) emissions standards.
- Aviation decarbonization targets.
- Emissions standards for trains and locomotives.
- Currently proposed federal building appliance efficiency standards.
- Currently proposed oil and gas regulations, including proposed methane venting, leaking, and flaring regulations as well as the *Protecting Our Infrastructure of Pipelines and Enhancing Safety (PIPES) Act* proposal to modernize pipe leak detection rules.

Continued prompt, effective deployment of federal executive authority is essential to put our nation on a path to meet our 2030 and 2050 emissions reduction goals.

E3's analysis finds that these proposed actions build on existing policies and drive collective emissions down 39 percent by 2030 and 44 percent by 2050, both below 2005 levels (Figure 8). The largest driver of additional emissions reductions in the near-term is the achievement of aviation decarbonization targets, highlighting this sector as a prime opportunity for strong federal action — and one that states are unlikely to be able to address alone, in light of federal preemption issues. While EPA's proposed vehicle emissions standards help increase ZEV adoption, benefits are consolidated in Alliance jurisdictions that have not yet adopted the ACC II and Advanced Clean Trucks (ACT) regulations. The impact of proposed power plant regulations in Alliance states and territories is also relatively modest, as most Alliance members already have ambitious clean energy mandates in place. This analysis does not account for the significant benefits of these federal actions for emissions in the rest of the United States, where they would likely lead to more dramatic reductions given the comparatively higher reliance on fossil fuels to generate electricity.

FIGURE 8: Additional federal executive action can help drive modest reductions in Alliance states and territories through vehicle emissions standards and aviation decarbonization.



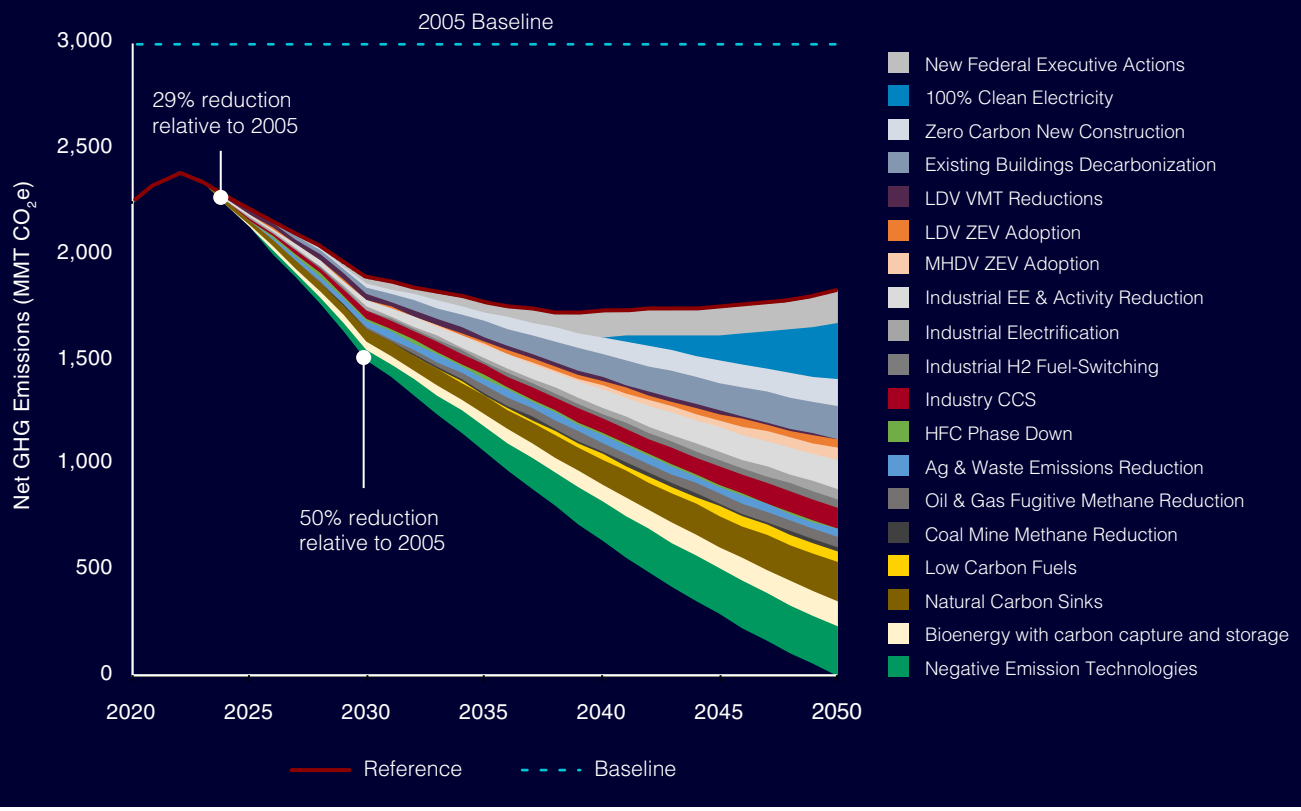
Note: All emissions are reported using 100-year global warming potential values from the IPCC's 5th Assessment Report. Wedges show emissions reductions relative to Reference Scenario emissions in future years.

A clear pathway to achieve medium- and long-term net-zero goals

Given the gap that remains to halve collective GHG emissions by 2030 and reach net zero by 2050, more action from both Alliance members and the federal government will be needed. Thankfully, E3's analysis demonstrates a clear pathway for Alliance members and the federal government to achieve these goals, which can be met through new laws and regulations across the Alliance, further federal regulations and congressional action, or some combination of both (Figure 9). Taken together, these actions can reduce collective gross GHG emissions 76 percent below 2005 levels by 2050, and include:

- Achieving a carbon-free electric sector by 2050.
- Ensuring new buildings are all-electric and stocked with highly efficient appliances, while decarbonizing existing buildings with efficient appliances and building shell retrofits.
- Electrifying new cars, trucks, and fleets while investing in mass transit and walkable communities to reduce vehicle miles traveled (VMT).
- Maximizing material and energy efficiency practices, electrifying low-temperature processes, substituting low-emission fuels for higher temperature processes, and capturing and storing other unavoidable carbon emissions from industrial facilities.
- Phasing down the use of refrigerants with high global warming potential.
- Reducing methane leaks from oil and natural gas systems, agriculture, landfills, and other waste sources.
- Enhancing NWLs to sequester an increasing amount of GHG emissions.

FIGURE 9: Achieving the Alliance's 2030 and 2050 climate goals will require further collective action across the economy and across levels of government.



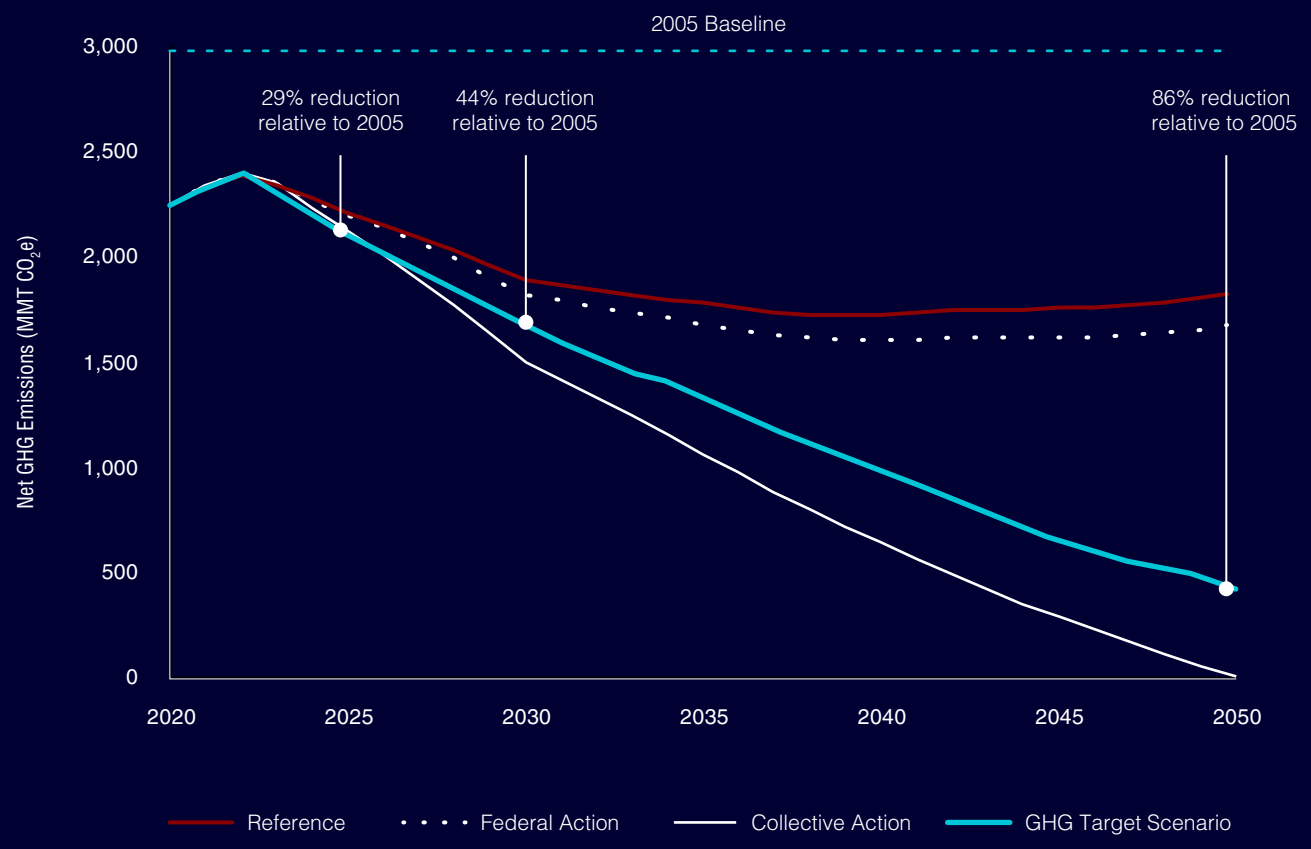
Note: All emissions are reported using 100-year global warming potential values from the IPCC's 5th Assessment Report. Wedges show emissions reductions relative to Reference Scenario emissions in future years.

Individual member targets put the Alliance goals within reach

Nearly all Alliance members have adopted economy-wide emissions reduction goals, with several states having adopted new or more ambitious targets since 2021's analysis. E3's updated analysis suggests that if all Alliance members put policies and programs into place to meet these individual GHG targets, they would collectively reduce their emissions to at least 44 percent below 2005 levels by 2030 and 86 percent by 2050, placing the Alliance's collective climate goals within reach (Figure 10).

Photo credit: Office of Michigan Governor Gretchen Whitmer and Invenergy

FIGURE 10: Achieving individual state GHG targets will put the Alliance's climate goals within reach.

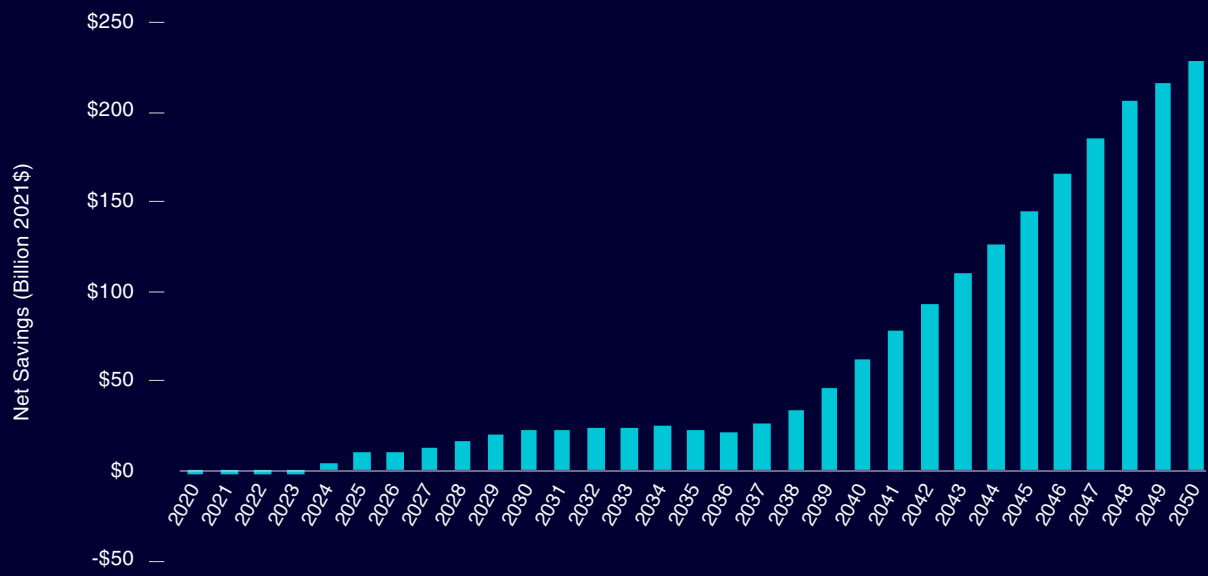


Achieving net-zero will result in significant co-benefits

Investing in a net-zero GHG emissions future can lead to significant benefits across Alliance states and territories. E3's analysis finds that on average, the monetary savings from improved public health, reduced fossil fuel spending, and avoided climate damages significantly outweigh the costs associated with the transition to a net-zero economy. Compared to the Reference Case, the Collective Action Scenario results in $23 billion in annual net savings in 2030 and nearly $230 billion in 2050 (Figure 11). These savings are achieved in addition to the many other known benefits of decarbonization not included in the analysis, such as job creation, economic growth, and non-air-quality public health benefits. A broad array of additional costs associated with failure to act on climate change are also not reflected in the analysis, including costs associated with additional wildfires and flooding, increased spread of certain diseases, and damages to infrastructure from extreme weather events, among others.[22]

On average, the monetary savings from improved public health, reduced fossil fuel spending, and avoided climate damages significantly outweigh the costs associated with the transition to a net-zero economy.

FIGURE 11: Investing in a net-zero future results in significant annual net savings on average through 2050.



Note: Savings represent incremental annual costs of the Collective Action Scenario relative to the Reference Scenario. Savings include avoided climate damages, public health impacts, and consumer fuel and maintenance savings; costs include capital investments in new clean infrastructure, operating costs, and fuel expenditures.

This analysis illustrates just one of many achievable pathways Alliance members can take to deliver on our collective climate goals. However, decarbonization is not only a question of economics or technological feasibility, and many challenges remain. Successfully charting the path to net zero will require developing a capable workforce; ensuring appropriate policy frameworks at the local, state, and federal levels for streamlining siting and permitting of new infrastructure without compromising meaningful engagement with impacted communities; rapidly strengthening resilience to the impacts of climate change; and ensuring that the benefits from the clean energy transition flow to all residents, particularly disadvantaged and low-income communities. It will also demand action on certain emission sources that are more difficult for states and territories to address on their own, such as aviation and waste, and rely on some factors that still carry a great deal of uncertainty, including the development of new technologies, the capacity of NWLs to act as a net carbon sink, and the potential for climate tipping points.

In light of these challenges and uncertainties, Alliance states and territories are more committed than ever to working together and across levels of government to accelerate action, overcome obstacles, and develop the next-generation solutions needed to secure America's net-zero future.

Alliance states and territories are more committed than ever to working together and across levels of government to accelerate action, overcome obstacles, and develop the next-generation solutions needed to secure America's net-zero future.

HIGHLIGHTING SOLUTIONS
across the alliance

In July, Maine Governor Janet Mills welcomed White House National Climate Advisor Ali Zaidi to Maine and unveiled a new target to install an additional 175,000 additional heat pumps across the state.

Photo Credit: Maine Governor's Office of Policy Innovation and the Future

Continuing to Advance Bold Climate Action

Alliance members are working together to advance a series of bold, high-impact actions across 10 key policy areas — GHG targets and governance; buildings; climate finance; electricity generation; industry; just transition and equity; natural and working lands; pricing carbon and valuing damages; resilience; and transportation. **These state-led climate efforts are being deployed at scale in each policy area to cut GHG emissions, safeguard public health, grow the economy, and build climate resilience.**

This report summarizes some of the newest and most groundbreaking actions that Alliance members have taken over the past year. For the most up-to-date, in-depth breakdown of climate actions across each policy priority, explore the new *U.S. Climate Alliance Policy Database* at data.usclimatealliance.org (Box 2).

 GHG Targets & Governance 32

 Buildings 37

 Climate Finance 44

 Electricity Generation 47

 Industry 53

 Just Transition & Equity 59

 Natural & Working Lands 65

 Pricing Carbon & Valuing Climate Damages 70

 Resilience 72

 Transportation 77

BOX 2

Climate Policy Database

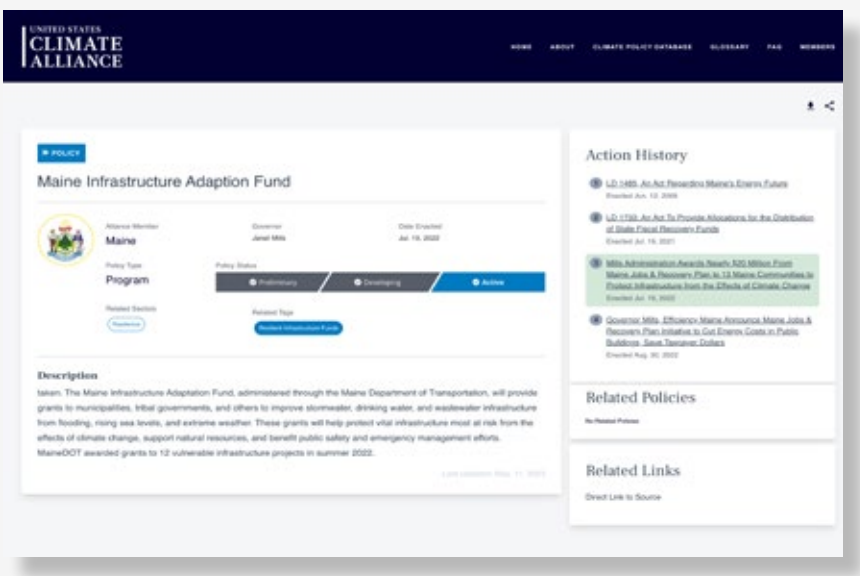
In July, the Alliance launched an interactive and public Policy Database with detailed information on climate action from the Alliance's states and territories.

Click buttons throughout this Report to enter the Climate Policy Database.

data.usclimatealliance.org

Refine your search with basic and advanced options

The database offers a wide-ranging, comparative, and up-to-date view of state-level climate action across the United States — enabling users to **search climate policies by sector, geography, policy or action type, keyword, and timeframe.**



Trace policy pathways with action histories

Unique among other policy trackers, it allows users to **view the chronological sequence of steps taken by a state or territory to reach a policy outcome**, tracing policy pathways through multiple stages and tracking how established policies have evolved over time.

While the Alliance Secretariat has long tracked this information internally, this year marked the first time the data has been standardized and made available to the public. In addition to supporting Alliance members, **the tool is already benefiting governmental, nonprofit, and academic partners at the local, state, national, and international levels interested in tracking U.S. state-led climate action.**

Continuing to Advance Bold Climate Action

GHG Targets & Governance

Alliance members are setting ambitious climate targets, developing and implementing detailed action plans, adopting programs that reduce emissions simultaneously across multiple sources, tracking progress, and engaging with communities, businesses, and other stakeholders to chart a path toward a net-zero future.

Member Action

The table below includes the number of members that have adopted – or are in the process of adopting – statutory and executive policies and actions. These counts are current as of November 2023.

Policies	# of Members
Lead by Example programs and goals	24
Economy-wide GHG goals	22
State climate action plans	20
Net-zero GHG goals	16

For the most up-to-date, in-depth breakdown of climate actions across the coalition, explore the Alliance Policy Database.

data.usclimatealliance.org

GHG Targets & Governance

Over the past year, Alliance members set new GHG emissions reduction targets to guide their climate priorities, drafted climate action plans that map out how to achieve those targets, and engaged with communities and stakeholders to bolster their states' climate frameworks.

GHG Targets & Governance: Policies and Actions Across the Alliance

Setting ambitious new climate targets

Alliance members established more robust climate goals this year, including:

California: Enacted the *California Climate Crisis Act*, which requires the state to reduce GHG emissions by 85 percent below 1990 levels and codifies the state's goal to achieve net-zero GHG emissions no later than 2045.[23]

Colorado: Strengthened the state's climate targets by setting statutory emissions goals in five-year intervals: at least 65 percent by 2035, 75 percent by 2040, 90 percent by 2045, and 100 percent (net zero) by 2050, all below 2005 levels.[24]

Delaware: Established a statutory target of net GHG emissions reductions of at least 50 percent below 2005 levels by 2030 and net-zero GHG emissions no later than 2050.[25]

See more info on the Climate Policy Database:
https://data.usclimatealliance.org/policy/1597

Maryland: Through Executive Order 01.01.2023.07, established targets to reduce energy consumption in state-owned buildings by 20 percent by 2031 compared to a fiscal year 2018 baseline.[26]

Massachusetts: Adopted a statewide net-zero target by 2050 with a requirement to reduce GHG emissions by at least 85 percent below 1990 levels in compliance with *An Act Creating A Next-Generation Roadmap for Massachusetts Climate Policy*.

Minnesota: Enacted legislation that commits the state to reduce GHG emissions by 30 percent below 2005 levels by 2025, 50 percent by 2030, and reach net zero by 2050.[27]

Rhode Island: Through Executive Order 23-06, adopted GHG targets for state agency buildings and vehicles in an effort to "lead by example" and support the state's goal to achieve net-zero emissions economy-wide by 2050.[28]

Planning for the next-generation climate policies

States established committees and developed roadmaps to help identify and plan for the climate action priorities needed to achieve their climate goals. Examples include:

California: Published a sector-by-sector roadmap to achieve carbon neutrality by 2045 and reduce anthropogenic emissions by 85 percent below 1990 levels. The plan requires drastic reductions in fossil fuel combustion and targeted carbon dioxide removal. By taking actions outlined in the state's *Scoping Plan*, California would reduce petroleum demand by 94 percent and smog-forming air pollution by 71 percent, create 4 million new jobs, and save $200 billion in health costs due to pollution in 2045.[29]

Colorado: Following successful implementation of approximately 95 percent of the state's legislative, regulatory, and administrative priorities identified in the *2021 Greenhouse Gas Pollution Reduction Roadmap*,[30] Colorado has launched a process to plan the state's climate policy framework for the coming three years through the Polis administration's *Greenhouse Gas Pollution Reduction Roadmap 2.0*.[31]

Connecticut: Identified a range of policy options to further mitigate GHG emissions and impacts as part of its GHG Inventory.[32] These include adopting sector sub-targets, increasing tree canopy in urban settings, requiring reporting of building energy consumption to prospective renters and buyers, adopting a net-zero energy building code, pursuing alternative fuels where electrification is not practical, improving bicycle and pedestrian infrastructure, and implementing strategies to meet the target of 5 percent vehicle miles traveled reduction by 2030, among others. The GHG Inventory also previewed policies that are under consideration for the Comprehensive Energy Strategy to be released in late 2023, including setting building performance standards, implementing a clean heat standard, and launching a future of natural gas planning docket under Connecticut's Public Utilities Regulatory Authority.

Guam: Received funding to develop its first Climate Action Plan. This Climate Action Plan will serve to increase the island's resilience to climate change by presenting a baseline GHG inventory of priority sectors and a priority list of GHG reduction measures to be implemented to meet Guam's goals for immediate and necessary climate action.

Maryland: Released a report that presents options to meet Maryland's ambitious climate goals of 60 percent emissions reductions by 2031 and net-zero emissions by 2045. The report, submitted to Governor Wes Moore and the Maryland General Assembly, described a potential pathway, as required by the *Climate Solutions Now Act*, and is based on the most up-to-date analysis and modeling by the Center for Global Sustainability at the University of Maryland.[33] Maryland also released the 2022 *Maryland Commission on Climate Change Annual Report*, providing recommendations to the executive branch and the Maryland General Assembly on actions the state can take to achieve its GHG emissions targets and prepare for and adapt to the impacts of climate change.[34]

Massachusetts: Through Executive Order 604, created the commonwealth's first climate chief and became the first state in the nation to establish such a cabinet-level position.[35] Governor Healey also created a Youth Climate Council to advise the governor and the Office of Climate Innovation and Resilience on climate policy and methods of building community resilience.[36]

New York: Published the *Scoping Plan*, which identifies a suite of actions to reduce the state's GHG emissions in line with the GHG emissions reduction targets set by the *2019 Climate Leadership and Community Protection Act* (CLPA) (40 percent by 2030 and 85 percent by 2050 from 1990 levels, ultimately achieving net-zero emissions by 2050).[37]

Photo credit: U.S. Climate Alliance

North Carolina: Released the *North Carolina Deep Decarbonization Pathways Analysis* to help policymakers and stakeholders identify the greatest opportunities to reduce emissions to at least 50 percent below 2005 levels by 2030 and achieve net-zero emissions no later than 2050 pursuant to Executive Order 246.[38]

Oregon: Published the *Oregon Climate Action Roadmap to 2030*, which outlines six recommendations to achieve Executive Order 20-04 emissions reduction goals (45 percent below 1990 levels by 2035 and at least 80 percent by 2050).[39]

Rhode Island: Published *The Rhode Island 2022 Climate Update*, which revises the state's 2016 climate plan based on substantial stakeholder engagement, research, and compilation and coordination across 13 state agencies.[40] The 2022 update provides an interim roadmap for Rhode Island to meet its 2030 GHG emissions reduction goal while the state develops its 2025 Climate Strategy for reaching net-zero emissions by 2050.

Taking stock and tracking progress

With planning processes underway, states made efforts to increase monitoring and transparency of their progress in reducing GHG emissions. For example, ten members updated their GHG emissions inventories, including **California**,[41] **Connecticut**,[42] **Hawai'i**,[43] **Minnesota**,[44] **New Jersey**,[45] **New York**,[46] **Pennsylvania**,[47] **Rhode Island**,[48] **Vermont**,[49] and **Washington**.[50] Other states and territories demonstrated where they are making progress (or not) towards implementation of their climate or clean energy plans, including:

Colorado: Released two of its *Biannual Greenhouse Gas Emissions Reduction Implementation Reports*, detailing implementation progress of policies and programs put into place in line with the Greenhouse Gas Pollution Reduction Roadmap, pursuant to Governor Jared Polis' Executive Order B 2021 1.[51]

Louisiana: Released its *2023 Annual Report*, highlighting actions taken in the past year to get the state on a path to achieve net-zero GHG emissions by 2050. The report identifies renewable electricity generation, industrial electrification, and industrial fuel switching to low-and-no-carbon hydrogen as three climate policy priorities.[52]

Maine: Released its *2022 Maine Won't Wait Progress Report*, recounting progress the state has made in implementing its climate action plan towards the statewide goal of carbon neutrality by 2045. An interactive dashboard was created to track updated progress on new programs and other metrics, like heat pumps installed, participation in the Community Resilience Partnership, and Maine land conservation.[53]

See more info on the Climate Policy Database:
https://data.usclimatealliance.org/action/1520
https://data.usclimatealliance.org/policy/1590

North Carolina: Released its *2022 Climate Strategy Reports*, which highlights progress from each cabinet agency toward achieving goals and recommendations outlined in Executive Order 80, Executive Order 246, and the *North Carolina Climate Risk Assessment and Resilience Plan*.[54] The report details efforts across state government to reduce greenhouse gas emissions through building decarbonization and motor fleet electrification, increase statewide resilience to the impacts of climate change, address public health impacts of climate change, and advance climate and environmental justice.

Puerto Rico: Released its *2019 and 2021 Greenhouse Gas Inventories Report*. Puerto Rico's 2019 *Climate Change Mitigation, Adaption, and Resiliency Law* requires that by 2025, island-wide GHG emissions be no more than 50 percent of 2005 levels and directs the Department of Natural and Environmental Resources to compile and publish a GHG emissions inventory that measures progress towards this goal. Emissions levels achieved in 2021 represent a 36 percent reduction from 2005 levels.[55]

Washington: Released the state's 2023 *Biennial Energy Report*, which details the progress being made on the State Energy Strategy recommendations on clean electricity, transportation electrification, buildings decarbonization, and clean fuels. The report also identifies areas where more progress is needed across every sector to decarbonize the state's economy by 2050.[56]

Wisconsin: Released the *2023 Clean Energy Plan Progress Report* to highlight the work done toward reaching carbon-free electricity goals set by the 2022 Clean Energy Plan.[57] The report highlights Wisconsin's evolving clean energy ecosystem, how the state has engaged Wisconsinites on its clean energy plan, progress toward the plan's goals, and key accomplishments by stakeholders and agency partners.

Continuing to Advance Bold Climate Action

Buildings

Alliance members are committed to decarbonizing the buildings sector, including collectively achieving zero-emission new construction as soon as practicable, accelerating efforts to eliminate emissions from existing buildings, and collectively quadrupling heat pump installations across the coalition by 2030.

Member Action

The table below includes the number of members that have adopted – or are in the process of adopting – statutory and executive policies and actions. These counts are current as of November 2023.

Policies	# of Members
Energy efficiency resource standards	20
Appliance efficiency standards	13
Statewide building performance standards	04
Clean heat standards	03
Emissions-based equipment standards	03

For the most up-to-date, in-depth breakdown of climate actions across the coalition, explore the Alliance Policy Database.

data.usclimatealliance.org

Buildings

Buildings account for over 30 percent of U.S. GHG emissions from both fossil fuel and electricity use. Alliance members are reshaping the built environment to make residential and commercial buildings less polluting and more energy efficient (Box 3). Building decarbonization efforts can also deliver far-reaching benefits for families and communities, as energy efficiency measures reduce energy burdens that disproportionately impact low-income and disadvantaged households, while health and safety measures make buildings more climate-resilient.

Buildings: Policies and Actions Across the Alliance

Appliance and equipment standards

Alliance members are accelerating the transition to more efficient and safe products. By adopting next-generation standards, states are helping consumers save money on energy and water consumption. Examples include:

California: Banned the sale of compact fluorescent lamps beginning January 2024 and linear fluorescent lamps beginning January 2025 to promote LEDs, a safer and more energy-efficient lighting alternatives.[58] Adopted the first-in-the-nation flexible demand appliance standards for pool controls to enable scheduling and shifting of load to support GHG reductions and grid reliability, while saving residential pool owners money on utility bills.[59]

Colorado: Passed appliance efficiency legislation that updated all of the state standards to the latest EnergyStar levels, upgraded water fixtures to a higher standard, and authorized agency review in five years to consider adopting additional standards. The state also phased out the sale of mercury-containing fluorescent light bulbs, created new water and energy-efficiency standards, and passed emissions-based standards for water heaters and fan-type central furnaces.[60]

Maine: Adopted state appliance efficiency standards to ensure residential and commercial products meet energy and water consumption requirements. Covered products include general service lamps, computers, plumbing fittings, plumbing fixtures, portable electric spas, spray sprinkler bodies, and water dispensers, all of which must comply with specific efficiency standards and test procedures.[61]

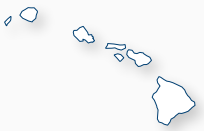
Maryland: Authorized the Maryland Energy Administration to update energy efficiency standards for a wide range of products sold in the state including, but not limited to residential furnaces, walk-in refrigerators

and freezers, red and green traffic signals, commercial clothes washers, air purifiers, showerheads, and more.[62]

New York: Enacted the *Advanced Building Codes, Appliance and Equipment Efficiency Standards Act of 2022* that updates the state energy code to facilitate improved energy and water efficiency standards for appliances.[63]

Oregon: Passed *House Bill 2062*, which aligns Oregon statute with recently adopted energy efficiency standards. These new product standards are estimated to save money for consumers and significantly reduce carbon emissions to help the state achieve its greenhouse gas reduction goals.[64]

Rhode Island: Passed Senate Bill 1119, which prohibits the sale or distribution of compact fluorescent lamps beginning January 2024 and linear fluorescent lamps beginning January 2025.[65]



Hawai'i: Added five products to its list of appliance and equipment standards and became one of the five states that banned mercury-containing fluorescent lamps this session, promoting more energy-efficient and mercury-free LED alternatives for environmental protection, energy conservation, and cost savings.[66]

See more info on the Climate Policy Database:
https://data.usclimatealliance.org/action/1432

Photo credit: U.S. Climate Alliance

BOX 3

Installing 20 million heat pumps across the coalition by 2030

In September at Climate Week NYC, **Alliance governors announced a series of new commitments from members to eliminate emissions from buildings, including collectively quadrupling heat pump installations by the end of the decade.**[i] As part of the Alliance's new heat pump target, members agreed to collectively reach 20 million heat pump installations across the coalition by 2030, with the aim of ensuring at least 40 percent of benefits flow to disadvantaged communities. These installations will advance progress toward Alliance members' goal of decarbonizing buildings, including collectively achieving zero-emission new construction as soon as practicable and accelerating efforts to eliminate emissions from existing buildings at a pace consistent with emissions targets under the Paris Agreement.

i U.S. Climate Alliance, "U.S. Climate Alliance Announces New Commitments to Decarbonize Buildings Across America, Quadruple Heat Pump Installations by 2030," [press release] September 21, 2023, https://usclimatealliance.org/press-releases/decarbonizing-americas-buildings-sep-2023/.

Vermont: Banned the sale of compact fluorescent lamps in February 2023 and linear fluorescent lamps beginning January 2024 to promote safer and more energy-efficient lighting alternatives.

Adopting more efficient building codes and standards

Maintaining up-to-date building codes is an integral tool in addressing the sector's contribution to GHG emissions. These codes ensure new buildings become more energy efficient, lower utility costs, and make it easier for homeowners and businesses to integrate clean energy development and vehicle electrification. Examples include:

California: Implemented the state's updated 2022 Energy Code, which includes updates to encourage efficient electric heat pumps for space and water heating, establish electric-ready requirements for new homes, and strengthen ventilation standards. For the first time in the nation, this California Energy Code update also includes solar-electric systems plus battery systems as the standards for select commercial building types.[67] California recently launched development activities for the 2025 Energy Code update which will further advance decarbonization and efficiency measures. In Summer 2023, the California Building Standards Commission adopted new measures to address embodied carbon emissions within large commercial buildings and schools, which go into effect July 1, 2024.[68]

Colorado: Created the Energy Code Board, which established a new state minimum energy code, combining the 2021 IECC with electric and solar-ready provisions.[69] The state Air Quality Control Commission adopted regulations for Colorado's building performance standards that require buildings over 50,000 square feet to reduce sector-wide GHG emissions 20 percent by 2030, below a 2021 baseline.[70]

Connecticut: Updated building codes to require the installation of level-two electric vehicle (EV) charging stations at each new construction of a state facility. The updated codes also direct municipalities to require certain commercial and multi-residential buildings to dedicate 10 percent of parking spaces to EV charging stations.[71]

Louisiana: Adopted statewide enforcement of the 2021 International Energy Code and the 2021 Residential Code and created an Energy Code Commission to enforce these new standards.[72]

Maryland: Released a draft regulation for statewide Building Energy Performance Standards (BEPS) as required under the *Maryland Climate Solutions Now Act of 2022*.[73] Covered buildings will be required to achieve a 20 percent reduction in net-direct GHG emissions by January 1, 2030, and net-zero direct GHG emissions by January 1, 2040. The Act also created the Building Energy Transition Implementation Task Force of 2023 to recommend programs, policies, and incentives aimed at reducing greenhouse gas emissions from the buildings sector.[74] The Buildings Task Force supports building decarbonization strategies with a focus on driving early action, equity, and cost effectiveness for covered and noncovered buildings under BEPS.

Minnesota: Passed HF 2310 as part of their House environment and natural resources omnibus bill package. The bill includes a benchmarking requirement for buildings over 50,000 square feet served by investor-owned utilities in certain areas of the state and appropriates funds to accomplish this goal.[75]

New York: Enacted legislation that advances zero-emissions construction in new buildings seven stories or lower, except large commercial and industrial buildings, by December 31, 2025, and all other new buildings by December 31, 2028.

Oregon: Became the fourth state to adopt a building performance standard by passing HB3409,

Photo Credit: Susan Watts, Office of New York Governor Kathy Hochul

which requires buildings over 20,000 square feet to meet energy use intensity standards. The bill also committed the state to joining the National Building Performance Standard Coalition.[76]

Rhode Island: Passed Senate Bill 855, which requires the state building code standards committee to revise the state energy conservation code to meet 2024 International Energy Conservation Code electric readiness provisions.[77]

Advancing building decarbonization through planning and innovation

Alliance members are working to decarbonize the building sector using a variety of pathways that meet the needs of their states and territories — such as energy efficiency resource standards, utility planning, renewable portfolio standards, energy efficiency programs, and more. Examples include:

California: Eliminated gas line extension allowances subsidies through a decision by the California Public Utilities Commission.[78] California also established goals for the construction of 3 million climate-friendly homes by 2030 and 7 million by 2035, as well as the deployment of at least 6 million heat pumps in California by 2030. California's legislature passed Senate Bill 48 (Becker) that requires an evaluation of potential strategies to address existing building energy efficiency and emissions improvements through mechanisms such as building performance standards, with a report due in 2026.[79]

Colorado: Advanced measures that support thermal energy development, including authorizing grants for geothermal system retrofitting, establishing labor standards for thermal energy projects procured by public entities, recognizing thermal energy as an eligible resource to meet clean heat targets, allowing regulated gas utilities to propose thermal energy network projects for review, and requiring the state's largest utility to propose pilot projects in 2024.[80] Colorado also passed legislation to prohibit utility gas line extension allowances.[81]

Massachusetts: Released the *Massachusetts Commission on Heat's Final Report*, recommending a focus on providing opportunities to under-resourced households and populations such as scaling up incentive programs, implementing new regulations, investing in clean heating and cooling technologies, and redirecting funds away from fossil fuels. This is in support of commonwealth-wide goals to achieve net-zero emissions by 2050.[82]

New Jersey: Through Executive Order No. 317, directed the New Jersey Board of Public Utilities to engage stakeholders in developing natural gas utility plans that reduce emissions in line with the state's

goal to reduce emissions by 50 percent below 2006 levels by 2030, and 100 percent clean energy by 2035. This includes considering the adoption of a clean heat standard.[83] The Board of Public Utilities also approved framework for utility plans to implement energy efficiency, building decarbonization, and demand response programs via utility triennium filing process.[84]

New York: Released its *Carbon Neutral Buildings Roadmap*, outlining actions to modernize buildings, eliminate fossil fuel use, and achieve an 85 percent reduction in GHG emissions by 2050.[85]

North Carolina: Through Executive Order 80, established a target of reducing energy consumption per square foot in state-owned buildings by 40 percent from 2003 levels. In 2022, state-owned buildings reduced their energy usage intensity by 32 percent compared to the 2003 baseline, avoiding $177 million in utility costs in 2022 alone.

Oregon: Released the *Oregon Public Utility Commission's Natural Gas Fact Finding Final Report*, assessing potential ratepayer bill impacts and identifying regulatory tools to mitigate customer impacts and accommodate utility action in achieving decarbonization goals.[86]

Rhode Island: Through Executive Order 23-06, mandated 100 percent renewable electricity for state government agencies and established specific targets for reducing emissions from onsite fossil fuel burning and overall site energy use intensity at state-owned buildings by 2030, 2040, and 2050.87

See more info on the Climate Policy Database: https://data.usclimatealliance.org/action/1229

Washington: Passed House Bill 1390, which will promote building decarbonization by upgrading district energy systems and reducing emissions in commercial and state-owned buildings.[88]

Increasing access to building efficiency upgrades and electrification programs for all

Alliance members are pushing for more rapid and expansive investments in decarbonization while upholding their state commitments to ensuring a just and equitable transition. By creating new programs and funding opportunities targeted at supporting underserved and disadvantaged communities, states and territories are ensuring essential programs and investments are accessible to all communities. Examples include:

California: Adopted guidelines for the direct install portion of the $922 million statewide Equitable Building Decarbonization Program. This direct install program will offer up to full funding for electrification and efficiency retrofit packages to support decarbonizing home upgrades for low-income households in California's most vulnerable communities.[89]

Colorado: The legislature enacted tax credits for air source and ground source heat pumps, as well as for district energy systems,[90] while the Colorado Energy Office launched a grant program to support neighborhood scale electrification.[91] Additionally, the state's Public Utilities Commission approved a plan to increase beneficial electrification spending by Colorado's largest utility by a factor of 20, allocating $68 million over the next three years.[92]

Connecticut: Launched the Residential Energy Preparation Services (REPS) program, which will help income-eligible homes remove health hazards and access energy efficiency upgrades to save money on energy costs.[93] REPS removes health and safety barriers (asbestos, mold, knob-and-tube wiring, etc.) when these barriers prevent weatherization (such as insulation and air sealing) work for income-eligible households. The initial funding of $12.3 million for this program comes from the federally funded State Energy Program, Low Income Home Energy Assistance Program, and the American Rescue Plan Act.

Maine: Maine surpassed its goal of installing 100,000 new heat pumps by 2025 two years early, a milestone that represents significant progress in reducing Maine's reliance on heating oil, lowering heating costs, and curbing harmful carbon emissions.[94] To continue the momentum, Governor Mills also unveiled a new target: installing another 175,000 additional heat pumps in

Maine by 2027, thereby bringing the number of heat pumps installed in Maine homes, businesses, and public buildings during her time in office to 275,000. If this target is achieved, Maine will have more than 320,000 heat pumps in total installed across the state.

Maryland: Passed a bill that requires the Department of Housing and Community Development to ensure energy efficiency and conservation programs for electricity customers are designed to achieve annual incremental gross energy savings. The bill also establishes a task force focused on ensuring that low-income households have access to energy-efficient, affordable, and low-emissions housing.[95]

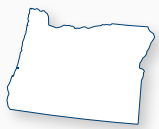
Massachusetts: Provided $50 million in grant funding for decarbonization retrofits in low- or moderate-income residential buildings, aiming for energy-efficient housing with clean heating, cooling, and hot water systems. The goals include improved housing, health benefits, greenhouse gas reductions, and local workforce opportunities.[96]

Michigan: Enacted laws to expand the eligibility of properties and projects for Commercial Property Assessed Clean Energy (C-PACE) financing.[97] C-PACE is a program that allows local government units to work with building owners and contractors on energy-efficient and climate-resilient projects and has led to over $332 million in energy savings for Michigan businesses over the last decade.

Minnesota: As part of the omnibus environmental and natural resources package, Minnesota passed a bill expanding access to a variety of home electrification programs. The bill allocates $38.7 million to expand weatherization services, provides funding for electric panel upgrades for low- or moderate-income households, allocates funds for a residential heat pump rebate program, and more.[98]

New Jersey: Through Executive Order No. 316, established a goal to electrify an additional 400,000 residential homes and 20,000 commercial spaces or public facilities by 2030, and make 10 percent of low-income residential homes electrification ready.[99]

New York: Launched a $250 million Community Decarbonization Fund through the New York Green Bank to expand and accelerate the lending capacity of smaller community-based investors by channeling financing into sustainable infrastructure projects that benefit historically marginalized communities.[100] Additionally, New York launched the Future Housing Initiative, a new partnership with New York City to fast-track and cover the incremental costs of the creation of 3,000 energy-efficient and all-electric affordable homes. This initiative will result in high-performance, all-electric multifamily buildings that provide residents with energy savings, resiliency, and improved air quality.[101] New York State Energy Research and Development Authority (NYSERDA) is also administering EmPower+, a program to aid low- and middle-income households with clean energy improvements, offering up to $10,000 per project for low-income and 50 percent coverage (up to $5,000) for middle-income households.[102]



Oregon: Passed HB3409, which established a statutory goal to install and use 500,000 residential and commercial heat pumps by 2030, prioritizing environmental justice communities and households without adequate or affordable heating or cooling systems.[103]

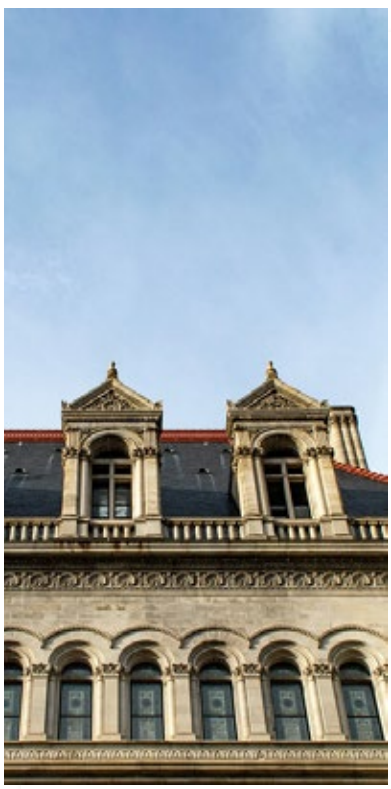
See more info on the Climate Policy Database: https://data.usclimatealliance.org/policy/1654

Vermont: Through Act 185 of 2022 (Fiscal Year 2023 Appropriations Act), designated $80 million of American Rescue Plan Act funds for weatherization assistance and incentives for low- and moderate-income households. This appropriation is in addition to the annual revenue raised through the state's participation in the Regional Greenhouse Gas Initiative cap-and-invest program for the electricity generation sector that also goes to support weatherization efforts and to the current fuel tax revenue.

Continuing to Advance Bold Climate Action

Climate Finance

Alliance members are integrating climate change into legislative budget requests and financial decision-making to ensure that state stewardship of public capital is aligned with achieving a net-zero future.



Member Action

The table below includes the number of members that have adopted – or are in the process of adopting – statutory and executive policies and actions. These counts are currentas of November 2023.

Policies	# of Members
Green and/or resilient infrastructure banks	18

For the most up-to-date, in-depth breakdown of climate actions across the coalition, explore the Alliance Policy Database.

data.usclimatealliance.org

Climate Finance: Policies and Actions Across the Alliance

Given the urgency and significant investments needed to address the climate crisis, states are working to reduce barriers to financing clean energy and resilience solutions and prioritizing ways to complement federal funds. For example:

California: Adopted the California Climate Commitment, a multiyear $52.3 billion budget to address climate change that will invest in clean transportation and energy; forest, water, and community resilience; innovation and jobs; and nature-based solutions, among many other climate solutions.[104]

Colorado: The legislature enacted a law that creates nine years of clean energy tax credits, totaling almost $100 million per year, for EV deployment, building electrification, geothermal energy development, and industrial decarbonization.[105] Governor Polis also signed SB23-283, which expands the use of the IIJA Cash Fund (created in fiscal year [FY] 22) to include IRA-funded projects.[106] The Colorado Clean Energy Fund, the statewide green bank, partnered with Tri-State Generation and Transmission to develop an on-bill finance program that will provide much needed low-cost and long-term financing to residences and commercial businesses seeking to make energy improvements to their facilities.

Connecticut: Announced $8.8 million in state funding to support climate resilience plans and project development grants, ensuring that the communities across the state are competitive for historic federal funding resources.[107]

Maine: Launched a new Commercial Property Assessed Clean Energy (C-PACE) program, allowing commercial property owners to repay energy-efficiency and clean-energy investments over time.[108]

Massachusetts: Launched the Massachusetts Community Climate Bank, the nation's first green bank dedicated to affordable housing, whose residents often bear a disproportionate burden in energy costs and climate impacts.[109] The Healey-Driscoll Administration also released its *Fiscal Year 2024-28 Capital Investment Plan* with record climate investments woven throughout, including over $1.4 billion to increase the sustainability and resilience of the commonwealth's transportation systems and over $1.6 billion to fund more than 40 state building decarbonization projects.[110]

See more info on the Climate Policy Database:
https://data.usclimatealliance.org/policy/1582

Michigan: Secured approximately $1.3 billion in climate-related spending between fiscal years 2023-24 for the Make it in Michigan budget. These investments included dollars to advance decarbonization in the energy, transportation, buildings, industrial, natural and working lands sectors, as well as new funds focused on advancing environmental justice.[111] Governor Whitmer also announced several new manufacturing and job investments being made with support from the state's economic development programs, including projects to build EV battery manufacturing plants,[112] a hydrogen electrolyzer manufacturing facility,[113] hydrogen storage systems,[114] and energy-efficient windows.[115]

New York: Announced historic investments authorizing an additional $4.2 billion for the landmark *Clean Water, Clean Air, and Green Jobs Environmental Bond Act of 2022*.[116]

Photo Credit: Office of Wisconsin Governor Tony Evers

North Carolina: Began development of a statewide flood resiliency blueprint. The $20 million project will form the backbone of a state flood planning process to increase community resilience to flooding throughout North Carolina's river basins. When completed in 2024, the blueprint and its online decision support tool will lead to actionable projects and funding strategies to reduce flooding, mitigate the impacts of flooding when it does occur, and recover afterward. The legislature allocated an additional $96 million to implement projects once identified.[117]

Puerto Rico: Announced the allocation of $105 million to support mitigation, adaptation, and resiliency measures to prevent coastal erosion and its effects on the island. The funds will be invested in the restoration of coral reefs, replenishment of beaches, planting of mangroves, and restoration of marshland, wetlands, and sand dunes, among others.[118]

Wisconsin: Established the Governor's Green Ribbon Commission on Clean Energy and Environmental Innovation. The commission, in consultation with Tribal Nations and other key stakeholders, will advise the Wisconsin Department of Administration and the Wisconsin Economic Development Corporation on the establishment of the state's first-ever Green Innovation Fund to support environmental and clean energy solutions, reduce pollution, lower energy costs, and expand access to clean energy options.[119]

See more info on the Climate Policy Database:
https://data.usclimatealliance.org/policy/1355
https://data.usclimatealliance.org/policy/1356

Continuing to Advance Bold Climate Action

Electricity Generation

Alliance members are developing policy pathways and programs to decarbonize the electricity grid, including establishing interim targets and identifying opportunities to better align planning and procurement processes for generation, distribution, and transmission resources with our collective climate goals.

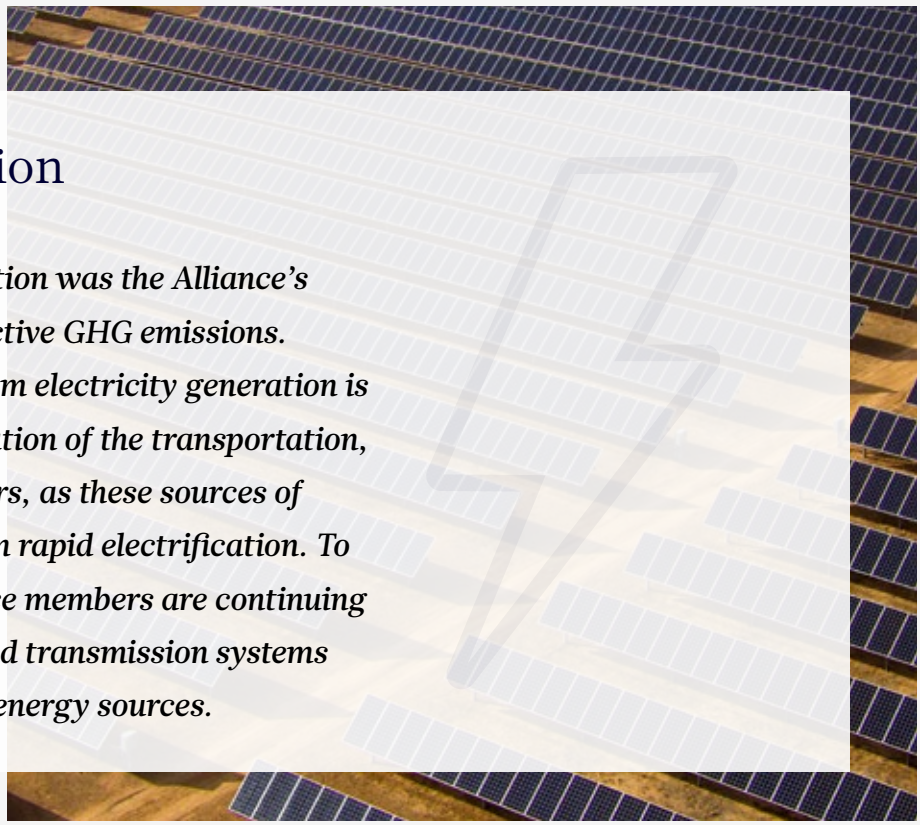
Member Action

The table below includes the number of members that have adopted – or are in the process of adopting – statutory and executive policies and actions. These counts are current as of November 2023.

Policies	# of Members
Clean electricity standards	23
100% clean electricity goals	19
Offshore wind goals	09
Energy storage goals	09

For the most up-to-date, in-depth breakdown of climate actions across the coalition, explore the Alliance Policy Database.

data.usclimatealliance.org



Electricity Generation

In 2021, electric power generation was the Alliance's second-largest source of collective GHG emissions. Addressing GHG emissions from electricity generation is also critical to the decarbonization of the transportation, buildings, and industrial sectors, as these sources of emissions are heavily reliant on rapid electrification. To support this transition, Alliance members are continuing to expand their distribution and transmission systems and deploy more zero-carbon energy sources.

Electricity Generation: Policies and Actions Across the Alliance

Progressing toward 100 percent clean energy

Transitioning to 100 percent clean energy is imperative to reducing overall GHG emissions and strengthening U.S. energy independence. States are primary drivers for clean energy policy, and Alliance members are adopting ambitious clean energy goals and conducting intentional planning and procurement to progress toward achieving their clean energy goals. For example:

California: Added statutory targets to the state's Renewable Portfolio Standards, requiring renewable energy and zero-carbon resources to supply 90 percent of all retail electricity sales by 2035 and 95 percent of all retail electricity sales by 2040, in addition to the SB 100 target of serving 100 percent of all retail electricity sales with clean energy by 2045.[120] Additionally, early this year the Public Utilities Commission recommended an electric resource portfolio for use in the state's transmission planning process. This recommendation included more than 85 gigawatts (GW) of new resources by 2035, including renewables such as geothermal and offshore wind, batteries, long-duration storage, and demand response.[121]

Colorado: Authorized the Geothermal Energy Grant Program to support the use of zero-emissions, geothermal energy for electricity generation and heating/cooling for homes, businesses, and communities. The program provides $12 million in total funding and is expected to run from August 2022 through June 2025.[122]

Connecticut: Issued a final decision on performance-based regulations, adopting GHG reduction and social equity among its regulatory goals.[123]

Maine: Initiated a technical study process to inform the state's energy plan to accelerate the commitment to using 100 percent clean electricity by 2040, as called for by Governor Janet Mills in early 2023. The *Maine Energy Plan: Pathway to 2040* process will engage the public on actionable and affordable strategies to meet this target, while aligning with the state's climate action plan, *Maine Won't Wait*, and building upon recent state energy analyses.

Maryland: Made the state's Community Solar Energy Generating Systems Pilot Program permanent, which will encourage investment in Maryland's solar energy industry, diversify the energy resource mix to meet renewable portfolio standard goals, and ensure low- and moderate-income consumers can access renewable energy benefits through consolidated billing.[124]

Minnesota: Enacted a law that establishes a carbon-free electricity standard in Minnesota. Under this standard, 100 percent of retail electricity sales by electric utilities to retail customers in the state must be generated or procured from carbon-free energy technologies by 2040, with additional percent-based milestones set every five years beginning in 2030.[125]

New Jersey: Through Executive Order No. 315, accelerated the state's target of 100 percent clean energy by 15 years to 2035.[126]

See more info on the Climate Policy Database:
https://data.usclimatealliance.org/policy/367

New York: Initiated a process to examine and identify zero-emission resources to meet a zero-emission electrical grid by 2040 in compliance with the *Climate Leadership & Community Protection Act* (CLCPA).[127]

Rhode Island: Through Executive Order 23-06, directed state agencies to lead by example and reduce GHG emissions associated with the burning of onsite fossil fuels at buildings and in vehicles by 40 percent by 2030, 70 percent by 2040, and 95 percent by 2050 (to the greatest extent feasible and from a 2014 baseline).[128]

Washington: Extended the state's clean energy standards in its 2019 *Clean Energy Transformation Act* (CETA) to electricity purchased by municipal and public utilities through third-party marketers. It ensures that industries that predominantly rely on third-party marketed electricity, such as crypto mining, are not able to bypass the state's clean electricity requirements. The initial law included provisions covering third-party marketed power for customers of investor-owned utilities.[129]

Vermont: Initiated a technical study process to inform Vermont's energy plan to accelerate the state's commitment to using 100 percent clean and/or renewable electricity by 2035. The Public Service Department is currently reviewing the policies and programs related to renewable electricity to determine what changes are necessary to achieve state energy and climate goals.

Developing offshore wind

Onshore wind is the largest source of renewable power in the United States,[130] and it plays a central role in the nation's clean energy transition. Alliance members have taken major steps to further develop wind energy resources in tandem with federal actions accelerating offshore wind lease areas. For example:

California: Established offshore wind planning goals of 2 to 5 gigawatts (GW) by 2030 and 25 GW by 2045; completed a preliminary assessment of the economic benefits of offshore wind as they relate to seaport investments and workforce development needs and standards report, and adopted a permitting roadmap that describes timeframes and milestones for a coordinated, comprehensive, and efficient permitting process for offshore wind energy facilities and associated electricity and transmission infrastructure off the coast of California.[131] The state also appropriated $6 million to support comprehensive, regional baseline environmental monitoring and research into the impacts of prospective offshore wind energy development in and around regions in which offshore wind energy areas have been leased by the U.S. Bureau of Ocean Management.

Delaware: Enacted legislation directing the Department of Natural Resources and Environmental Control to study the transmission impacts of offshore wind, and to work with neighboring states on offshore wind transmission.[132]

Louisiana: Enacted a law that requests the Louisiana Department of Economic Development (LED), in consultation with the Louisiana Workforce Commission, to evaluate the state's readiness for attracting offshore wind energy supply chain industries to the state. In particular, LED and the commission are tasked with studying the state's potential economic and workforce growth opportunities related to expanding the offshore wind industry, and preparing a report highlighting key findings and recommendations for the state to enhance its economic advantage and develop a skilled workforce in the offshore wind supply chain sector.[133]

Maine: Enacted a law that authorizes procurement of up to 3 GW of offshore wind energy by 2040. The bill also allows for critical port development, creating opportunities for workforce development across Maine and establishing the state as a leader in the emerging offshore wind industry.[134]

Maryland: Passed the *Promoting Offshore Wind Energy Resources* (POWER) *Act*, which established goals and guidelines around Maryland's offshore wind energy development. Notably, the act set a state goal of reaching 8.5 GW of offshore wind energy capacity by 2031. The POWER Act ensures that Maryland's goals are consistent with IRA provisions relating to domestic content requirements and labor standards and requires a study relating to transmission upgrade requirements.[135]

Massachusetts: Launched the Interagency Offshore Wind Council to work with communities and stakeholders to develop and maintain an offshore wind strategic plan for the commonwealth's offshore wind energy development.[136] Additionally, Governor Healey signed H. 5060, which codified a goal of procuring 5,600 MW of offshore wind energy by 2027, as well as authorized coordination of offshore wind solicitation with other New England states.[137]

New Jersey: Through Executive Order No. 307, increased New Jersey's offshore wind energy goal to 11,000 MW by 2040. The order also directs the Board of Public Utilities to study the feasibility of further increasing the target.[138] Additionally, the New Jersey Economic Authority approved $3.7 million in grants under its Offshore Wind Workforce and Skills Development Grant Challenge for training programs to strengthen and diversify the state's offshore wind workforce, with a particular emphasis on serving overburdened communities.[139] The state also enacted legislation to pass federal investment credits back to offshore wind developers for first-round offshore wind projects.[140]

North Carolina: Executed memorandums of understanding with the United Kingdom[141] and Denmark[142] to foster mutually beneficial relationships in the transition to a clean energy economy (UK) and offshore wind energy (Denmark) through shared knowledge, experiences, data, and best practices relevant to the development of offshore wind energy and related sectors. In addition, Governor Cooper's Taskforce on Offshore Wind Economic Resource Strategies convened for the first time in early 2022, and since that time has issued two annual reports with findings and recommendations aimed at advancing offshore wind supply chain development, preparing an offshore wind-ready workforce, and investments in state assets to secure North Carolina's role in growing the national industry.[143]

New York: Undertook the third competitive solicitation to procure at least 2 GW of offshore wind energy in furtherance of the statutory target of 9 GW of offshore wind by 2035.[144]

Oregon: Published its *2022 Floating Offshore Wind Study*, which discusses the benefits of integrating up to 3 GW of offshore wind energy into Oregon's electric grid by 2030. The study involved significant stakeholder engagement and input along with literature review, including public meetings, and identifies areas for future study and engagement.[145]

Modernizing transmission and distribution grid systems

Achieving 100 percent clean energy will require significant investment in the transmission and distribution system to connect new clean energy capacity with demand centers.[146] Alliance members have taken steps to improve transmission planning, siting, permitting, and cost allocation methodologies, and several states are including environmental justice provisions such as the need for consideration of the disproportionate pollution

burden of historically disadvantaged communities. For example, **Connecticut, Maine, Massachusetts, New Jersey, New York, Rhode Island, and Vermont** joined together to send a multi-state request to the U.S. Department of Energy (DOE) asking for federal support to establish an interregional transmission planning collaborative. This partnership intends to leverage DOE expertise to explore increased transmission ties around the Northeast and the development of offshore wind infrastructure.[147] Other examples include:

California: Enacted a series of laws that requires the state's energy agencies to ensure their memorandum of understanding and workplan on transmission reflect the coordination that is needed to help meet the state's energy goals, to assess barriers to electricity interconnection and energization, and provide recommendations on how to accelerate those processes.

Connecticut: Enacted a law that provides for local representation on the Connecticut Siting Council. This council oversees the siting of power facilities and transmission lines, including for development of clean energy sources.[148]

Delaware: Convened a dedicated Grid Modernization Working Group through the Governor's Energy Advisory Council to explore transmission and distribution systems, grid resiliency and reliability, and other topics raised by members and develop recommendations for addressing these topics in the state energy plan.[149]

Illinois: Prohibited counties from placing restrictions on the installation or use of commercial wind or solar energy facilities or otherwise establishing siting standards that preclude the development of such facilities, expediting the state's clean energy development permitting process.[150]

See more info on the Climate Policy Database:
https://data.usclimatealliance.org/policy/1484

Maine: Established a stakeholder-led integrated grid planning process that will take place every five years to identify stakeholder priorities, goals, methods, tools, and assumptions that utilities must incorporate into their grid plans. Maine also passed a law requiring the Governor's Energy Office to conduct a study regarding the establishment of an independent distribution system operator to oversee state grid planning and operations. This serves to integrate and consolidate efforts spanning several state agencies and ensures all electric grids in Maine are operated to optimize efficiency, equity, reliability, and customer service.[151]

Massachusetts: Established the Commission on Clean Energy Infrastructure Siting and Permitting to bring together stakeholders to provide input and accelerate Massachusetts' clean energy infrastructure development. The commission is tasked with reducing permitting timelines, providing community input on siting and permitting of clean energy infrastructure, and ensuring benefits of the clean energy transition are equitably shared.[152]

Michigan: Enacted bipartisan laws to allow local governments and commercial solar energy developments to opt into payments in lieu of taxes (PILT).[153] Solar PILT will cut red tape, cut down on costly, time-consuming litigation between local governments and commercial solar energy developments, and clear the way for more solar energy in Michigan. Additionally, the Michigan Public Service Commission issued the final report of *MI Power Grid*, an initiative to guide and maximize the benefits of rapid changes in the state's transition to clean energy.[154]

New Jersey: Board of Public Utilities directed staff to issue guidance on a second phase for the state's agreement to build transmission capacity for an increased goal of 11 GW of offshore wind by 2040.[155]

New York: Updated its energy storage roadmap to assess market reforms and procurement mechanisms needed to double the state's energy storage deployment goal to at least 6 GW by 2030. The updated roadmap also identifies research and development needs to accelerate technological innovation in energy storage and recommends approaches to storage deployment.[156] New York also launched the Coordinated Grid Planning Process, a new long-term system planning process to enable major electric utilities to identify necessary transmission investments to meet

CLCPA objectives.[157] Additionally, Governor Hochul signed legislation to ensure that cumulative impacts will be taken into consideration in environmental permitting processes. It also requires environmental impact statements to examine whether the siting of a facility will cause or increase a disproportionate pollution burden on disadvantaged communities.[158]

Puerto Rico: Released its *One Year Progress Report of the Puerto Rico Grid Resilience and Transitions To 100 Percent Renewable Energy Study* in conjunction with the U.S. Department of Energy. To meet the targets set in the *Puerto Rico Energy Public Policy Act* (Act 17-2019), Puerto Rico is exploring renewable energy, energy storage technologies, distributed generation resources, electric vehicles, responsive charging, and energy efficiency that can be implemented across the territory.[159]

Washington: Enacted a law that requires utilities to forecast transmission capacity needs on a 20-year horizon when they develop integrated resource plans. These plans are directed to assess the availability of, and requirements for, utilities' regional generation and transmission capacity to provide and deliver electricity to customers and to meet the requirements of the *Clean Energy Transformation Act* and the state's decarbonization policies.[160] Additionally, HB 1216 establishes the Interagency Clean Energy Siting Coordinating Council, which is tasked with identifying actions that can be taken to improve the siting and permitting of clean energy projects.[161] The law also improves the environmental review process for clean energy projects and requires up-front statewide environmental reviews be conducted for utility-scale solar, onshore wind, and green hydrogen projects, with co-located battery storage.

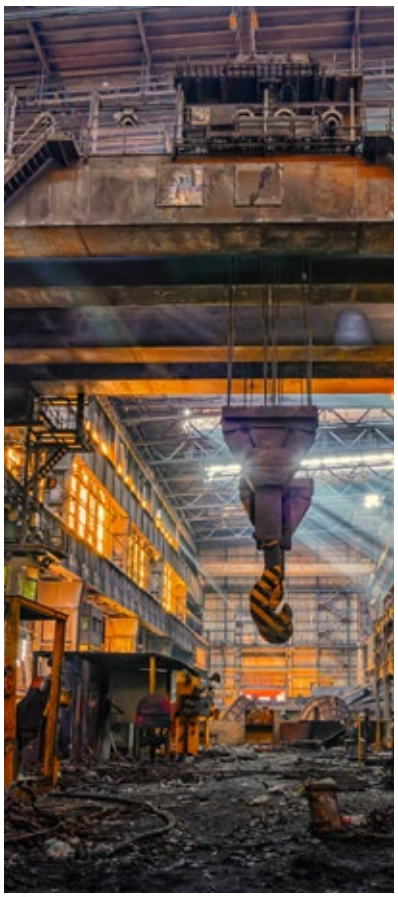
Wisconsin: Awarded nearly $10 million in funding from the Energy Innovation Grant Program to support 32 energy-related projects that increase the deployment of renewable energy, microgrids, and energy storage; bolster preparedness and resiliency in the energy system; facilitate comprehensive energy planning; and more.[162]

Vermont: Through Vermont Electric Power Company and the District Distribution Utilities, made significant investments to address transmission constraints which will unlock capacity for more renewables. In addition, the Public Service Department is making progress on storage by issuing grants to utilities to install utility- controlled customer-sited storage in low- and moderate-income households and municipal facilities, working to remove institutional barriers to market access through policy and regulatory reforms, and fostering market creation through utility procurement planning guidance and advocacy for changes to state policy and programs that value clean generation when it is needed.

Continuing to Advance Bold Climate Action

Industry

Alliance members are establishing innovative policy frameworks for eliminating GHG emissions from the industrial sector and its supply chains while fostering the growth of a strong, domestic clean manufacturing economy.



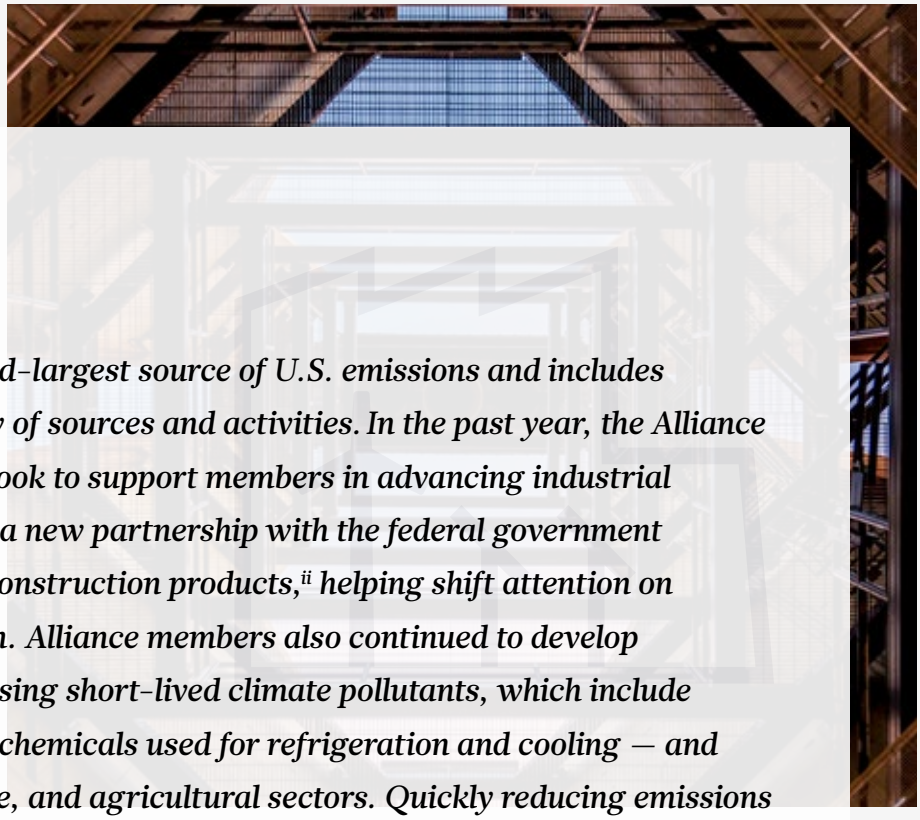
Member Action

The table below includes the number of members that have adopted – or are in the process of adopting – statutory and executive policies and actions. These counts are current as of November 2023.

Policies	# of Members
Standards and programs to phase-down hydrofluorocarbons (HFCs)	11
Standards and programs to reduce methane from oil and gas, landfill, and agricultural sources	10
Buy Clean standards, studies, and incentive programs	09
Standards to reduce GHG emissions from industrial facilities	05

For the most up-to-date, in-depth breakdown of climate actions across the coalition, explore the Alliance Policy Database.

data.usclimatealliance.org



Industry

The industrial sector is the third-largest source of U.S. emissions and includes emissions from a diverse array of sources and activities. In the past year, the Alliance published a new policy guidebook to support members in advancing industrial decarbonization[i] and initiated a new partnership with the federal government to create demand for cleaner construction products,[ii] helping shift attention on this sector into the mainstream. Alliance members also continued to develop and implement policies addressing short-lived climate pollutants, which include hydrofluorocarbons (HFCs) — chemicals used for refrigeration and cooling — and methane from fossil fuel, waste, and agricultural sectors. Quickly reducing emissions of these highly potent pollutants will lead to near-term climate benefits and is a necessary element of any path to meet the goals of the Paris Climate Agreement.

i U.S. Climate Alliance, *Enabling Industrial Decarbonization: A Policy Guidebook for U.S. States*, December 2022, https://usclimatealliance.org/guide/industrial-decarbonization-guide-dec-2022/.

ii U.S. Climate Alliance, "U.S. Climate Alliance Welcomes New Federal-State Buy Clean Partnership, Commits Resources to Bolster State Efforts," [press release] March 8, 2023, https://usclimatealliance.org/press-releases/buy-clean-partnership-mar-2023/.

Industry: Policies and Actions Across the Alliance

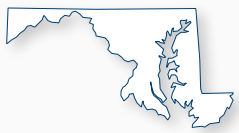
Buying cleaner construction materials

The production of cement, steel, glass, and forest products — components of critical construction materials — account for nearly a quarter of the manufacturing sector's total GHG emissions.[163] In recognition of their collective purchasing power and the need to drive down industrial emissions, 13 Alliance members **(California, Colorado, Hawai'i, Illinois, Maine, Maryland, Massachusetts, Michigan, Minnesota, New Jersey, New York, Oregon, and Washington)** joined with the federal government to launch the Federal-State Buy Clean Partnership in March 2023.[164] Alliance members continued to advance new and existing Buy Clean policies at the state level throughout the year, including:

California: Adopted the nation's first legislative targets to reduce the GHG emissions of building materials. The state is set to develop a strategy by 2025 to meet this goal, which will consider the role of policy mechanisms like environmental product declarations (EPDs) and the establishment of low-carbon product standards.[165] This is in addition to California's existing Buy Clean program and its in-development strategy to achieve a net-zero cement sector.[166]

Colorado: Began implementing its Buy Clean Colorado Act, including developing resources and engaging with stakeholders. The Department of Transportation will benchmark materials through the collection of EPDs, which will inform maximum global warming potential (GWP) limits for asphalt and asphalt mixtures, cement and concrete mixtures, and steel.[167] In June, the Office of the State Architect published its first draft of GWP limits covering asphalt and asphalt mixtures, cement and concrete mixtures, glass, post-tension steel, reinforcing steel, structural steel, and wood structural elements.[168]

Minnesota: Enacted a Buy Clean law covering steel, concrete, and asphalt materials used in state buildings and major highways. The law calls for the creation of an Environmental Standards Procurement Task Force by October 2023, which will advise the state's departments of administration and transportation on EPD collection requirements, industry incentives, GWP limits, and more. The law also establishes an EPD grant program. The state must establish a pilot program by July 2024, GWP limits for concrete by January 2026, and GWP limits for steel and asphalt by January 2028.[169]



Maryland: Enacted a Buy Clean law focused on low-carbon concrete, which requires cement and concrete producers to submit EPDs to the Department of General Services by December 2024, asks the department to establish maximum acceptable GWP limits for cement and concrete mixtures by January 2026, and tasks state agencies with implementing these limits in projects by July 2026. The law also creates an EPD assistance fund to support manufacturers in their development.[170]

See more info on the Climate Policy Database:
https://data.usclimatealliance.org/action/1232

New Jersey: Enacted a 2023 low-carbon concrete law that requires the state to solicit low-carbon concrete and develop GWP guidelines for state construction projects, while also creating tax credits for concrete with low embodied carbon, for concrete that captures and stores carbon, and for concrete producers to generate product-specific EPDs.[171]

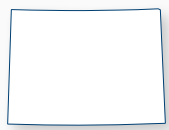
New York: Through Executive Order No. 22, directed the state to reduce the embodied carbon in common construction materials, including through the submission of EPDs.[172] This order builds on laws from 2021[173] and 2022[174] that tasked the Office of General Services to consider performance-based GWP standards and bid incentives for the use of low-embodied carbon concrete in state-funded projects.

Washington: Issued the final report on its Buy Clean Buy Fair pilot projects, which had involved developing a reporting database to collect environmental and labor information from five state construction projects. The pilot projects yielded lessons learned on contractor support and procurement process adjustments.[175]

Planning for a decarbonized industrial future

State climate planning, target setting, and incentives are essential for creating a policy environment that coordinates and directs the industrial sector's emissions towards zero. Many Alliance members made progress on these fronts with the release of and request for new industry-focused reports, the establishment of tax incentives and grants to support key decarbonization pathways, and the advancement of regulations and GHG emissions limits on industrial operations.

California: Enacted a law that calls for the development of recommendations and decarbonization pathways suitable for green renewable hydrogen[176] and a law that creates a regulatory framework for carbon capture, utilization, and sequestration, including banning the practice of enhanced oil recovery using injected carbon dioxide.[177] The state is also developing the *Industrial Decarbonization and Improvement of Grid Operations* program and continuing support for the *Food Production Investment Program*. Both of these programs funds advanced technologies that can be deployed in industries to benefit the electric grid, reduce greenhouse gas emissions, and improve air quality in under resourced communities.[178] Additionally, a new Clean Hydrogen Program provides financial incentives to eligible in-state projects for the demonstration or scale-up of the production, processing, delivery, storage, or end use of clean hydrogen.[179]



Colorado: Adopted first-of-a-kind rules in the nation to reduce both air pollution in local communities and GHG emissions from industrial and manufacturing facilities. The Greenhouse Gas Emissions and Energy Management for Manufacturing Phase 2 (GEMM 2) rules ensure 18 of Colorado's highest-emitting manufacturers — including petrochemicals, microchips, and glass — collectively reduce their GHG emissions 20 percent by 2030, compared to 2015 levels. These facilities must begin to limit emissions beginning in 2024. Colorado adopted rules earlier for trade-exposed cement and steel facilities in GEMM 1 at the end of 2021.[180] The state also enacted a law that renames the Colorado Oil and Gas Conservation Commission to the Energy and Carbon Management Commission (ECMC), broadens its authority to regulate new geothermal energy resources, and directs the study of hydrogen pipelines and storage.[181] A second law granted ECMC the authority to pursue Class VI primacy from EPA and to establish a regulatory framework for carbon sequestration. A third law calls for the development of a carbon management roadmap.[182] Lawmakers also enacted a bill creating a regulatory framework for the development of a clean hydrogen economy in Colorado, including the creation of a 10-year state hydrogen use-income tax credit with strong eligibility criteria for green hydrogen used in "hard-to-decarbonize end uses."[183] A separate law creates merit-based, refundable tax credits for industrial facilities to implement GHG emissions reduction improvements.[184]

See more info on the Climate Policy Database:
https://data.usclimatealliance.org/policy/1074

Connecticut: Enacted a law that calls for the development of a hydrogen strategic plan by the end of 2024. The plan must focus on hydrogen produced by renewable sources and its application in hard-to-decarbonize end uses, such as high-temperature industrial processes and maritime shipping.[185]

Illinois: Enacted a law that establishes a hydrogen fuel replacement tax credit in an amount equal to $1 per kilogram of eligible zero-carbon hydrogen used to displace fossil fuels and fossil fuel-derived hydrogen in end uses that are not easily electrified. Hydrogen used in light- and medium-duty vehicles, in building heating, and for power generation is ineligible for the credit. The credit has bonus adders available for projects that provide specific benefits to workforce and equity communities.[186]

Maryland: Commissioned and released a report, *Manufacturing Sector Decarbonization Strategies and Impacts in the State of Maryland*, which outlines the challenges and opportunities to reduce emissions from the state's manufacturing sector, with special attention on its highest emitting cement facilities. The report evaluated the sector's existing activities, processes, and potential sectoral structural changes. The report estimated strategies through 2050 including mitigation costs and employment impacts and provided emission reduction estimates.[187]

Massachusetts: As part of its 2050 economy-wide determination letter for state GHG emissions limits, the commonwealth established a 2050 GHG emission sublimit for commercial and industrial heating and cooling and for industrial processes.[188]

Michigan: Released three *Clean Energy Asset Roadmap* reports that identify, evaluate, and detail opportunities to speed the growth of geothermal, solar, and wind use in commercial and industrial facilities. Next the Department of Environment, Great Lakes, and Energy plans to release a clean energy assets database, which will identify facilities that both supply and use clean and renewable technologies.[189] Michigan also launched the Industrial Decarbonization Innovation Challenge, an initiative to discover and support groundbreaking technologies and entrepreneurs focused on decarbonizing the industrial sector. Successful applicants will have an opportunity to engage in a paid pilot project where up to $250,000 will be made available to support industrial decarbonization demonstrations and other technology development services.[190]

Oregon: Released a legislatively mandated renewable hydrogen study, which explored potential applications for renewable hydrogen and barriers to deployment in the state.[191] Governor Kotek also signed a bill that defines "green electrolytic hydrogen" and "renewable hydrogen" and directs its energy office to provide education and awareness of these types of hydrogen.[192]

Washington: Enacted a law that calls for the creation of a state industrial strategy by 2025, including an assessment of the net-zero transition's impacts on manufacturing.[193] The state budget also appropriates money to conduct detailed economic and decarbonization plans for its five refineries and created a grant program for "hard-to-abate" sectors like industry.[194]

Reducing emissions of short-lived climate pollutants (SLCPs)

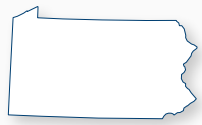
Short-lived climate pollutants represent one of the biggest opportunities for concrete near-term emissions reductions due to their global warming potential, which can be thousands of times stronger than CO_2. Action taken to mitigate SLCP emissions will have outsized climate benefits in the next decade. In addition, SLCPs can contribute to the formation of tropospheric ozone, which is itself a short-lived climate forcer and air pollutant that exacerbates smog and negatively impacts public health and agricultural productivity.[195] Alliance members continue to lead the nation with policies that reduce SLCPs — such as next-generation refrigerant management programs, utilization of emerging technologies, landfill methane regulations, and methane mitigation requirements for oil and gas — while also ensuring the federal government's promulgation of national HFC and methane rules builds from the foundation of ambitious state-led efforts.

California: Adopted amendments to its oil and gas methane regulation, which include a requirement that oil and gas operators follow up and mitigate any methane plumes the state detects via future availability of satellite imagery.[196] The California Air Resources Board (CARB) also published a *Summary Report of the 2020 and 2021 Airborne Methane Plume Mapping Studies*, which describes how it used data from airborne remote sensing pilot research projects to mitigate methane plumes.[197] In May 2023, CARB hosted a workshop on levers to potentially improve its 2010 landfill methane regulation, such as by incorporating next-generation emissions monitoring technology, optimizing gas collection, and standardizing and clarifying reporting requirements.[198]

Colorado: Adopted a first-of-its-kind regulation verifying GHG emissions intensity of upstream oil and gas facilities, which will help the state reduce over 6 million metric tons of CO_2e per year by 2030. The new rule defines how facilities must calculate their GHG intensity, monitor operations to ensure compliance with intensity standards, and keep records to accurately account for emissions from their operations.[199]

Maryland: Published its final landfill methane regulation, which includes emissions monitoring, leak detection, and gas collection and control system requirements for specific active and inactive landfills in the state.[200] The Department of the Environment estimates the rule will achieve a 25-50 percent reduction in landfill methane emissions.[201]

New York: Announced an update to its value of carbon guidance, adding the social costs per ton of HFCs and sulfur hexafluoride (SF_6).[202] The guidance now provides monetary values for the avoided emissions of many GHGs, including CO_2, CH_4 (methane), N_2O (nitrous oxide), and seven types of HFCs.[203]



Pennsylvania: Published the *Pennsylvania Methane Overflight Study Final Report*, which describes the results of a 2021 research study on the effectiveness of airborne flyover technology to measure methane emission sources. The report helped state regulators identify 145 large sources of emissions and reduce or eliminate 12 of them, mitigating over 2.2 million metric tons of CO_2e per year and serving as a proof of concept for future methane detection and mitigation activities in the state.[204]

See more info on the Climate Policy Database:
https://data.usclimatealliance.org/action/1532

Washington: Released preliminary draft text for its landfill methane emissions regulation, which will establish reporting, monitoring, and technology requirements to mitigate emissions from a major source of methane,[205] and its HFC regulations, which include establishing a refrigerant management program, updating labeling and disclosure requirements, and more.[206] Washington also invested $15M in a new grant program for reducing landfill methane emissions.[207]

Continuing to Advance Bold Climate Action

Just Transition & Equity

Alliance members are partnering with frontline communities to develop climate and clean energy solutions; providing training, facilitation, and funding that bolsters capacity and fosters leadership in those communities; and directing significant expenditures to create environmental and economic benefits for vulnerable and overburdened populations and grow family-sustaining jobs.

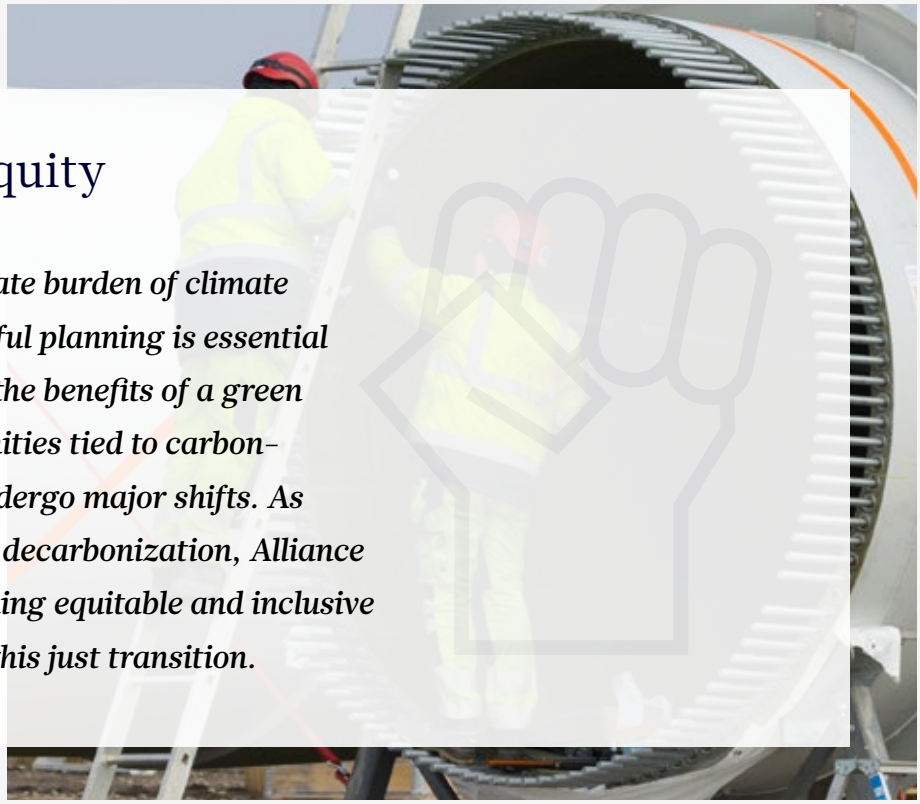
Member Action

The table below includes the number of members that have adopted – or are in the process of adopting – statutory and executive policies and actions. These counts are current as of November 2023.

Policies	# of Members
Environmental justice offices or interagency bodies	19
Environmental justice screening and policy tools	18
Just transition offices or interagency bodies	09

For the most up-to-date, in-depth breakdown of climate actions across the coalition, explore the Alliance Policy Database.

data.usclimatealliance.org



Just Transition & Equity

Considering the disproportionate burden of climate pollution and its impacts, careful planning is essential to ensure all communities feel the benefits of a green economy. In addition, communities tied to carbon-intensive industries need to undergo major shifts. As their economies move towards decarbonization, Alliance members are actively establishing equitable and inclusive systems and tools to facilitate this just transition.

Just Transition & Equity: Policies and Actions Across the Alliance

Expanding workforce capacity

The expanding clean energy sector requires an increasing number of skilled professionals to spearhead the transition. In response, several Alliance members have taken proactive measures to initiate training programs, conduct workforce analyses, and allocate additional funding to address the growing workforce demands. Examples include:

California: Enacted a series of laws to establish workforce development grants to support community workforce training centers and to study the feasibility of achieving 50 percent and 65 percent in-state assembly and manufacturing of offshore wind energy careers and projects as specified in the federal *Inflation Reduction Act* of 2022. The state also provided more than $25 million in funding to local and regional partners to develop training programs in the climate economy including forestry and wildfire protection and offshore wind. The California Workforce Development Board also awarded $12 million to build a pilot program to support oil and gas workers to transition to oil and gas well capping jobs.

Colorado: Enacted a series of laws that established job training opportunities and equitable pay for energy public works projects,[208] dedicated $38.6 million to fully cover enrollment costs for training programs in sectors with critical shortages, including in firefighting and forestry,[209] and created the Strengthening Photovoltaic and Renewable Careers program, directing the Colorado Workforce Development Council to build career pathways for students into clean energy.[210] Further, the council is partnering with the Colorado Department of Transportation on a zero-emission vehicles analysis and workforce plan. The state also launched an Innovative Mobility Grant Program with a ZEV workforce development area to develop and attract the skills and talent necessary to meet the changing demands of the transportation electrification sector.[211]

Guam: Received additional funding to expand Guam Green Growth (G3) to neighboring islands to help establish their own green growth initiatives. This regional effort will create new green industries and jobs to support a sustainable future and reduce vulnerabilities. G3 is a public-private partnership aimed at achieving a sustainable, prosperous, and equitable future for Guam and to-date, has established three community gardens, a circular economy makerspace and innovation hub, and multiple cohorts of conservations corps.

See more info on the Climate Policy Database:
https://data.usclimatealliance.org/policy/1340

Illinois: Provided $10 million in funding for the Climate Works Pre-Apprenticeship Program, and $6 million for the Energy Transition Barrier for Reduction Program as part of the *Climate and Equitable Jobs Act*.[212]

Maine: Provided $2.5 million in funding for clean energy workforce development through the Clean Energy Partnership program. Since December 2022, these projects have engaged with over 2,000 participants, attracting new workers to the clean energy and energy efficiency workforce, providing career training and upskilling opportunities to existing workers, increasing diversity and representation in the clean energy workforce, and facilitating new and expanded clean energy apprenticeship, pre-apprenticeship, and internship models for entry into rewarding and high-paying jobs.

Massachusetts: Launched the new Clean Energy Innovation Pathway program to provide students with experiential learning opportunities in the commonwealth's growing renewable energy sector. The pathway will support the sector's workforce demands, which has contributed to over 14 percent of net jobs created in Massachusetts since 2010.[213]

New Jersey: Released its *Green Jobs for a Sustainable Future* report, identifying workforce opportunities and demands in supporting the state's green economy. The report shows that building decarbonization and offshore wind developments will be the biggest growing jobs in the state's green economy.[214] The New Jersey Economic Development Authority Board approved an MOU with New Jersey Institute of Technology to provide $399,000 in funding to the Professional Offshore Wind Energy Certificates Program to bolster workforce training opportunities for college students.[215] New Jersey also convened the Clean Buildings Working Group to plan for meeting the workforce needs to transition the building sector away from fossil fuels. Additionally, the state allocated $5 million for the Green Job Council's Building Our Resilient, Inclusive, and Diverse Green Economy (NJ BRIDGE) initiative grant award.[216]

North Carolina: Released its *Climate Change Workforce Diversity Report*, which outlines recommended strategies to diversify occupations in the clean energy and climate change sector.[217] The report was drafted by representatives from historically Black colleges and universities, the community college system, workforce boards, Tribal representatives, and state agencies such as the departments of commerce and environmental quality.

Michigan: Announced $1.3 million in federal funding that will support the MI Climate Corps, a partnership among AmeriCorps programs, Michigan Community Service Commission, and other state and local partners to expand the workforce needed to implement the MI Healthy Climate Plan.[218] The state also expanded the EV Jobs Academy,[219] launched a Mobility Talent Action Team,[220] and funded and launched a new High-Tech EV Center at the University of Michigan[221] — all with the objective of engaging more students and recruiting workforce talent.

See more info on the Climate Policy Database:
https://data.usclimatealliance.org/policy/1370

Pennsylvania: Through Executive Order 2023-17, created the Commonwealth Workforce Transformation Program that will invest up to $400 million of federal funding over the next five years in on-the-job training for projects funded by the IIJA and IRA.[222] The order allows eligible contractors or unions working on federally funded projects to be reimbursed up to $40,000 per worker to train new employees and is estimated to create up to 10,000 jobs.[223]

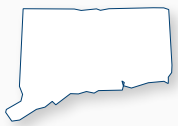
Washington: Enacted legislation that establishes the Washington Climate Corps Network to identify and grow climate-related service opportunities that will help create clean energy, low-carbon, climate-resilient communities around the state. The legislation also requires the state to project clean energy job growth and skills needs and to collaborate with business and labor on workforce development efforts to meet these growing needs.[224]

Developing tools and criteria for equitable outcomes

Alliance members have invested in data and tools that help identify and safeguard communities that are disproportionately affected and disadvantaged by climate impacts. These investments are instrumental in understanding the full effects of climate change on these communities and informing the development of impactful policies and programs. Examples include:

Colorado: In March 2023, Governor Polis directed the Colorado Department of Public Health and Environment to implement the recommendation of the Environmental Justice Action Task Force, which suggested creating a definition for disproportionately impacted communities that applies to all state agencies in order to reduce confusion, improve clarity and certainty for all involved, and allow agencies to use resources more efficiently.[225]

Delaware: To integrate environmental justice into its decision-making, Delaware Natural Resources and Environmental Control has developed a map-based tool for agency staff that leverages data and information from agency programs and external partners to help identify communities disproportionately impacted by agency decisions and environmental issues.[226]



Connecticut: Enacted Senate Bill 1147, granting the Department of Energy and Environmental Protection and the Connecticut Siting Council the authority to deny permits for facilities that are unable to avoid further impacts on overburdened communities.[227] The Connecticut Institute for Resilience and Climate Adaptation also finalized a state Environmental Justice Screening Tool, CT EJScreen. The state may use this tool in conjunction with SB 1147 to prioritize the health and safety of overburdened communities.[228]

See more info on the Climate Policy Database: https://data.usclimatealliance.org/action/1531

Hawai'i: Created a mapping tool to identify underserved communities at a higher risk to sea level rise and other coastal erosion hazards based on different sociodemographic and economic factors. This map is on the block group level, providing more granular information for the state.[229]

New Jersey: Adopted the state's Environmental Justice Rules in compliance with its Environmental Justice Law, making New Jersey the strongest in the nation by allowing the state to deny permits to new facilities that cannot avoid disproportionate effects on overburdened communities or serve public interest.[230]

New York: Released finalized criteria to identify disadvantaged communities across the state, accompanied by an interactive map displaying census tracts that have been identified as disadvantaged communities. This comes in support of New York's commitment to ensure at least 35 percent, with the goal of 40 percent, of the state's Climate Act benefits are directed to disadvantaged communities per the *Climate Leadership and Community Protection Act*. Having clear definitions for disadvantaged communities is essential for future actions, such as Governor Hochul's directive to the Department of Environmental Conservation to study how to identify, prevent, and address the health and environmental impacts of extreme heat on disadvantaged communities.[231]

Photo credit: Office of Wisconsin Governor Tony Evers

Rhode Island: Released an environmental justice policy that prioritizes and incorporates fairness and justice in all programs and initiatives at the Department of Environmental Management, from recruiting and hiring more people of color in permanent and seasonal positions to directing solutions at the historic and disproportionate burden of environmental hazards faced by minority and low-income communities in Rhode Island.[232]

Vermont: Enacted the *Vermont Environmental Justice (EJ) Law*, the state's first law specifically meant to address environmental health disparities and improve the health and well-being of all Vermont residents.[233] The Environmental Justice Law establishes Vermont's Environmental Justice State Policy. In meeting the deliverables of the law, Vermont has advanced Principles for Community Engagement and a Framework for Environmental Benefit Spending Reports.

Ensuring community engagement at all levels

Enacting policies to achieve a just and equitable transition requires the active involvement and input of communities directly impacted by those policies. In 2023, Alliance members continued to expand community participation in decision-making and program implementation. Examples include:

California: Enacted Assembly Bill 2108 to amend the state's water code, adding provisions for increased community input and environmental justice considerations. The law creates environmental justice and Tribal community coordinator positions and outlines a stipend program to promote meaningful community engagement in the state and regional board decision-making process.[234]

Colorado: Established requirements for cumulative impact analysis for clean hydrogen and carbon capture and storage projects located in or near environmental justice communities, and requires a finding of no-net-negative impact for projects to be approved.[235] Colorado is implementing recommendations from the Environmental Justice Action Task Force provided in its *Final Report of Recommendations* to incorporate equity analyses into agency decisions, close data gaps, improve community engagement, ensure inclusive environmental projects, evaluate just transition opportunities, and implement the existing Just Transition Action Plan.[236]

Louisiana: Released a framework to implement the state's first climate action plan. The framework forefronts the sustained development of climate equity data and a commitment to rigorous assessment of equity impacts.[237]

Maine: Released the Equity Subcommittee of the Maine Climate Council's final recommendations to ensure benefits to communities statewide from the *Maine Won't Wait* climate action plan. The report proposes a structure for increased community participation in decision-making and calls for stronger equity considerations in the climate action plan.[238]

Photo credit: Delaware Department of Natural Resources and Environmental Control

North Carolina: Implemented directives from Executive Order 246 including each cabinet agency publishing public participation plans and the Governor's Office hosting a series of in-person and virtual community engagement sessions focused on advancing environmental justice.[239]

Wisconsin: Held the first-ever Tribal Nation Energy Symposium in March 2023, where nine Tribal Nations were represented in Public Service Commission decision-making. This secured representation of the Midwest Tribal Energy Resources Association on the interconnection rulemaking committee and additional filing requirements for applications for projects in Ceded Territory.[240]

Establishing environmental justice offices and positions

Alliance states and territories have taken intentional steps this year to create dedicated roles inside state government focused on advancing environmental justice and supporting an equitable transition. Examples include:

Connecticut, Maine, Massachusetts, Rhode Island, Vermont: Co-authored a letter requesting that ISO New England (the region's power grid operator) create an executive-level environmental justice position.[241]

Delaware: The Department of Natural Resources and Environmental Control established the state's first environmental justice coordinator position, which is charged with developing and leading implementation of the agency's strategic vision of environmental justice.[242]

Massachusetts: Created a new position of undersecretary of environmental justice within the Secretariat of Energy and Environmental Affairs.[243]

New York: Created an Office of Just Transition, centralizing the state's efforts for an economy-wide just transition as New York decarbonizes its energy supply.[244]

North Carolina: Designated "environmental justice leads," who serve in leadership positions in each cabinet agency to be the points of contact for the public and government officials on environmental justice concerns across state government.[245]

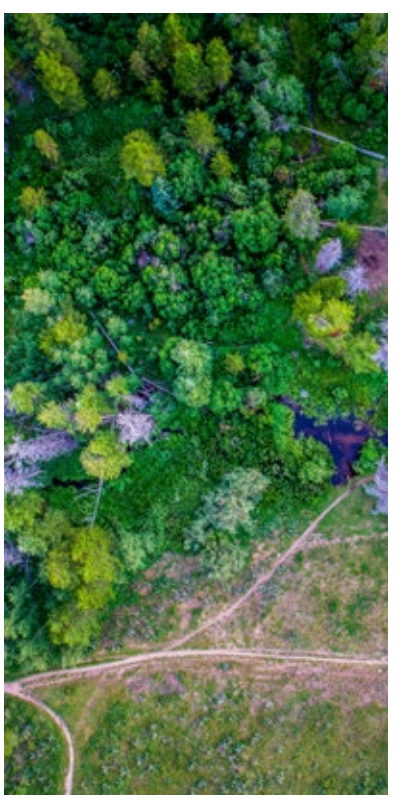
Rhode Island: The Office of Energy Resources welcomed a new energy justice manager who will work to ensure department programs are equitable, accessible, and inclusive as the state seeks to scale up its clean energy infrastructure,[246] while the Department of Environmental Management brought in a climate justice specialist as part of its senior leadership team.[247]

Vermont: Vermont established the Office of Civil Rights and Environmental Justice within the Agency of Natural Resources to support the implementation of Vermont's Environmental Justice Law and compliance with federal civil rights requirements.[248]

Continuing to Advance Bold Climate Action

Natural & Working Lands

Alliance members are scaling best practices for land management, restoration, and conservation to contribute to emission reductions and carbon sequestration at the scale needed for deep decarbonization and, where appropriate, integrating natural and working lands into state mitigation and resilience plans with ambitious goals that center equity and prioritize actions that deliver multiple benefits.



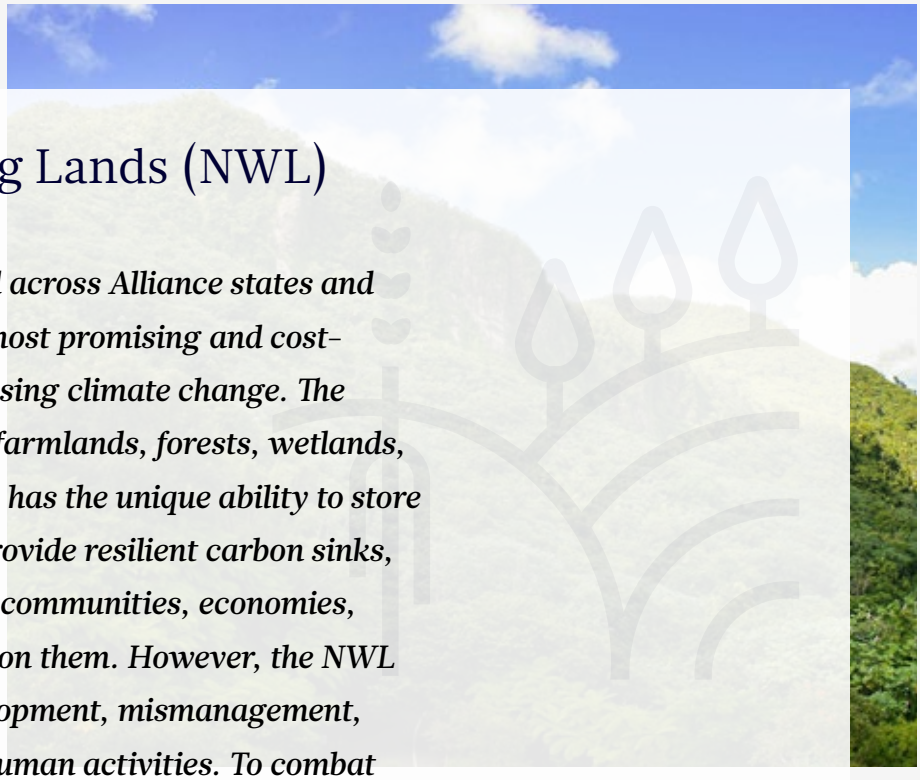
Member Action

The table below includes the number of members that have adopted – or are in the process of adopting – statutory and executive policies and actions. These counts are current as of November 2023.

Policies	# of Members
NWL in state GHG inventories	21
NWL conservation or sequestration goals	13
Healthy soils programs	11

For the most up-to-date, in-depth breakdown of climate actions across the coalition, explore the Alliance Policy Database.

data.usclimatealliance.org



Natural & Working Lands (NWL)

The lands and waters located across Alliance states and territories hold some of the most promising and cost-effective solutions for addressing climate change. The NWL sector, which includes farmlands, forests, wetlands, coasts, and other land types, has the unique ability to store carbon in plants and soils, provide resilient carbon sinks, and protect and enhance the communities, economies, and ecosystems that depend on them. However, the NWL sector faces risks from development, mismanagement, climate impacts, and other human activities. To combat this, Alliance members in 2023 continued to plan for, incentivize, and deploy natural climate solutions at scale.

Natural & Working Lands (NWL): Policies and Actions Across the Alliance

Prioritizing climate-smart land management

Alliance members are setting new conservation goals and developing plans to meet these targets in a way that promotes resilience, GHG emissions reductions, carbon sequestration, and other ecosystem services. Examples include:

California: Passed historic legislation calling for a portfolio of actions to increase climate action on our natural and working lands, including setting targets, regularly reporting on progress toward achieving them, improving GHG accounting, and standardizing the state's approach to tracking benefits of climate action in this sector.[249]

Colorado: Released the state's first *Strategic Plan for Climate-Smart Natural and Working Lands*. This report identifies strategies that conserve, protect, and manage NWL that will achieve the state's target of reducing emissions (or increasing sequestration) on NWL by 1.0 million metric tons (MMT) of carbon dioxide equivalent (CO_2e) by 2030 from a 2005 baseline, as outlined in *Colorado's GHG Pollution Reduction Roadmap*. The strategies identified will also deliver ecological, community, and economic benefits across Colorado.[250]

Illinois: Published its *Report to the Illinois General Assembly*, which provides recommended strategies for the state to conserve 30 percent of Illinois's land and water by 2030. Based on input received from three public listening sessions, the report proposes voluntary and incentive-based programs to scale up protected areas in the state.[251]

Photo Credit: U.S. Climate Alliance

Massachusetts: Launched the Forests as Climate Solutions initiative to manage commonwealth forests in ways that optimize carbon sequestration and mitigate climate harms to help meet its aggressive climate goals. This initiative will develop climate-oriented forestry practices for Massachusetts lands to enhance carbon storage, create climate-smart forest management incentives for private woodlot owners and municipalities, provide financial assistance to forestry businesses to reduce carbon loss and decarbonize operations, and expand funding for land conservation.[252]

New York: Enacted legislation that sets the goal to support and contribute to national efforts to conserve at least 30 percent of U.S. land and water by 2030. The Department of Environmental Conservation and the Office of Parks, Recreation and Historic Preservation will work together and with stakeholders to develop a strategy to achieve these conservation goals.[253]

See more info on the Climate Policy Database:
https://data.usclimatealliance.org/policy/994

Vermont: Enacted legislation that sets a goal to permanently conserve 30 percent of all land in Vermont by 2030. The law calls for an inventory of land that's conserved now and it calls for public input on a plan for how the state can conserve 30 percent of its land by 2030 and 50 percent by 2050.[254]

Investing in natural climate solutions

Financial feasibility is often a barrier to investing in climate solutions. Given the important role that the NWL sector must play in securing a net-zero future, Alliance members have supported critical funding opportunities to promote and incentivize NWL projects that are essential to conservation, resilience, and partnership in achieving statewide climate goals. Examples include:

Colorado: Began implementing its new Keep Colorado Wild Pass, which is on track to raise significant new revenue for conservation, wildlife adaptation and resilience efforts, and equity in the outdoors.[255] The pass provides access to all Colorado State Parks and forthcoming select federal fee sites at a deeply discounted rate, and is sold with Colorado vehicle registrations to boost purchase levels.

Connecticut: Adopted the Governor's proposed statutory goal in PA 23-206 of increasing the tree canopy coverage in environmental justice communities

in the state by 5 percent for those communities whose current tree canopy cover is less than 40 percent to ensure that the benefits of open space and tree cover are enjoyed equitably by residents of the state.[256]

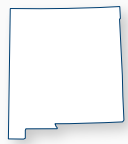
Delaware: Significantly increased funding allocated in the state budget for the Tree for Every Delawarean Initiative,[257] which is part of the state's comprehensive plan to respond to climate change by planting at least one tree for every resident.[258]

Guam: Received funding to develop a Carbon Credit Program for Ugum Watershed, a priority watershed on Guam. The project will support the efforts of Guam Green Growth (G3) projects.

Louisiana: Broke ground on a nearly $3 billion ecosystem restoration project to rebuild land and wetlands in the Barataria Basin, an area experiencing some of the highest rates of land loss and sea level rise globally. The Mid-Barataria Sediment Diversion will use the sediment-building power of the Mississippi River to build and sustain up to 26,000 acres of wetlands, mimicking natural processes to reconnect the river to surrounding wetlands. Another major component of the project includes investments in communities and natural resources, like fisheries, that may be impacted by project operations. The state partnered with the U.S. Army Corps of Engineers, Louisiana Trustee Implementation Group, and the National Fish and Wildlife Foundation to design and fund the project through Deepwater Horizon oil spill natural resource damages settlement dollars and criminal fines.[259] Louisiana also celebrated the unanimous passage of its fourth Comprehensive Master Plan for a Sustainable Coast,[260] a renewal of the state's nonpartisan commitment to coastal protection and restoration dating back to 2007.

Maryland: Awarded funds through the Department of Agriculture's Conservation Grants Programs to support sustainable farming practices and carbon sequestration. Cover Crop Plus+ is an agricultural conservation program that offers farmers a premium incentive to improve soil health and water quality through cover crop mixes. Maryland also announced a new tree-planting incentive program, awarding farmers two dollars for each new tree planted. The program divides tree planting into four ecosystem priorities: windbreak establishment, riparian forest buffer, hedgerow planting, and tree and shrub establishment.[261] Coordinated by the Department of the Environment, the state aims to plant and maintain five million native trees by 2031 to increase carbon-capture and improve water quality.[262]

New Jersey: Awarded $24.3 million in Natural Climate Solutions Grants to local governments and nonprofits to create, restore, and enhance New Jersey's green spaces and tree canopies in urban areas, salt marshes, and forests.[263] This funding was made available due to New Jersey's participation in the Regional Greenhouse Gas Initiative (RGGI), which provides the state with auction proceeds to invest in programs and projects designed to help meet its climate, clean energy, and equity goals.



New Mexico: Announced the New Mexico Land of Enchantment Legacy Fund, which directs funding to existing programs to protect communities from climate disasters, safeguard urban and rural water supplies, protect wildlife, and support the outdoor recreation community. The fund leverages federal money that will be disbursed annually, with an initial investment of $50 million to begin disbursement in the 2024 fiscal year and a trust fund with an initial investment of $50 million.[264]

See more info on the Climate Policy Database:
https://data.usclimatealliance.org/policy/1376

North Carolina: Launched the Natural Infrastructure Flood Mitigation Program, which seeks to mitigate flooding using natural infrastructure.[265] This new program was enacted by legislation as a way for the state to lean on natural and working lands for essential flood storage and will support building wetlands and restoring streams to store water and reduce flooding in downstream communities. The program is being piloted by a $3.5 million project to address flooding in the Stoney Creek watershed, where chronic flooding blocks access to evacuation routes and the local hospital.

Oregon: Established a permanent natural and working lands fund to support natural climate solutions for agriculture, forestry, watersheds, and fish and wildlife, with special emphasis on equitable distribution

of the benefits of natural climate solutions among landowners, Tribes, land managers, and environmental justice communities. The $20 million fund is intended to support financial incentives, technical assistance, and research into natural climate solutions.[266]

Vermont: Released the Payment for Ecosystem Services and Soil Health Working Group's final report, proposing a payment program for improving ecosystem and economic health. The program establishes incentives for farmers to adopt agricultural conservation practices that will support carbon storage; nutrient, soil, and stormwater retention; water quality outcomes; and biodiversity.[267]

Continuing to improve NWL analysis and accounting for net-zero implementation

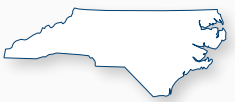
Understanding the role that NWL can and must play in achieving and sustaining net-zero GHG emissions requires robust data and monitoring of carbon sinks and emissions in Alliance states and territories. Alliance members are working together and with experts to develop innovative approaches to understand and integrate NWL into emissions and sequestration inventories, as well as track progress on NWL policies and actions. Examples include:

California: Conducted the state's first ever analysis to understand how GHG emissions and sequestration in the NWL sector can support the state's climate mitigation goals, allowing California to include sequestration and emissions from the NWL sector in its roadmap to achieving carbon neutrality.[268]

Maryland: Quantified statewide annual agricultural soil carbon fluxes and examined the impacts of potential contributions of planned best management practices, creating one of the most detailed soil carbon inventories for any state in the nation. Maryland plans to include the new agricultural soil carbon analysis in its final GHG reduction plan, due in December 2023, which will outline policies for implementation to reach state goals of a 60 percent reduction in GHG emissions by 2031 and net-zero emissions by 2045.[269]

Oregon: Enacted legislation to require the development of a baseline net biological-carbon sequestration and storage inventory, nonbinding goals

for biological-carbon sequestration and storage, and activity-based metrics to evaluate progress on increasing carbon sequestration and storage in NWL.[270]



North Carolina: Developed the first submerged aquatic vegetation (SAV) or seagrass GHG inventory and methodology in the nation to account for carbon sequestration from North Carolina's vast seagrass and blue-carbon ecosystems.[271] The SAV inventory will be included in the broader North Carolina 2024 GHG inventory.

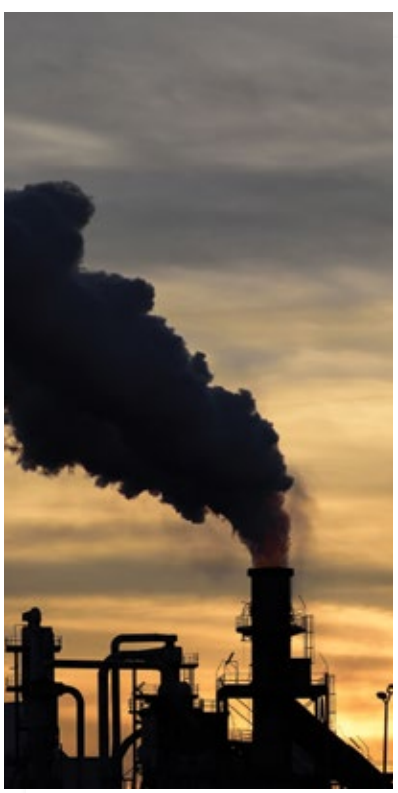
See more info on the Climate Policy Database:
https://data.usclimatealliance.org/action/1530

Rhode Island: Included land use, land use change, and forestry in state GHG emissions inventory for the first time with the release of the *2019 Rhode Island Greenhouse Gas Emissions Inventory*.[272]

Continuing to Advance Bold Climate Action

Pricing Carbon & Valuing Climate Damages

Alliance members are incentivizing cost-effective emissions reductions by setting prices or caps on carbon pollution while also considering societal and environmental impacts of greenhouse gas emissions and climate change, including the social cost of greenhouse gases, across relevant policy-making and decision-making processes.



Member Action

The table below includes the number of members that have adopted – or are in the process of adopting – statutory and executive policies and actions. These counts are current as of November 2023.

Policies	# of Members
Social Cost of Greenhouse Gases in policymaking	14
Carbon market participation	12

For the most up-to-date, in-depth breakdown of climate actions across the coalition, explore the Alliance Policy Database.

data.usclimatealliance.org

Photo Credit: Office of Michigan Governor Gretchen Whitmer

Pricing Carbon & Valuing Climate Damages: Policies and Actions Across the Alliance

Alliance members are incentivizing cost-effective emissions reductions by setting prices or caps on carbon pollution. Pricing carbon complements regulatory actions by not only driving GHG emissions reductions, but by also generating revenue that states can re-invest into advancing climate action and helping frontline communities. Alliance members are also expanding their use of the social cost of greenhouse gases (SC-GHG), a metric that estimates the net societal costs of additional GHG emissions, to help inform policy decision-making. For example:

California: Released its *2023 Annual Report to the Legislature on California Climate Investments Using Cap-and-Trade Auction Proceeds*, which finds that since 2014, Cap-and-Trade auction proceeds have helped fund over 500,000 projects across the state.[273] These projects have provided over 400,000 rebates for zero-emission and plug-in hybrid vehicles, conserved or restored nearly 900,000 acres of land, and expanded or added transit service, among many other benefits. Over $6.7 billion of these investments, representing 73 percent of total investments, have benefited disadvantaged communities and low-income communities and households.

Minnesota: Enacted legislation directing the state's Public Utility Commission to provisionally adopt and apply EPA's draft SC-GHG values found in its 2022 *External Review Draft of Report on the Social Cost of Greenhouse Gases: Estimates Incorporating Recent Scientific Advances* when establishing the environmental costs associated with different sources of electricity.[274] Per existing statute, utilities must use the commission's cost estimates, along with other factors, when evaluating and selecting resource options.

New York: Announced the development of an economy-wide cap-and-invest program that will be aligned with the statewide emissions requirements of 40 percent below 1990 levels by 2030, and at least 85 percent reduction by 2050.[275] This program will limit potential costs to New Yorkers, invest proceeds in efforts to drive emission reductions in an equitable manner, and maintain the competitiveness of state businesses and industries. New York also released an update to its Value of Carbon guidance, which provides the first-ever Social Cost of Sulfur Hexafluoride, estimated at $4.7 million per ton.[276]

Washington: Launched its cap-and-invest program and began holding quarterly allowance auctions with proceeds invested across the state to improve access to clean transportation and clean energy, increase climate resiliency in ecosystems and communities, and address environmental justice and health equity issues.[277]

See more info on the Climate Policy Database:
https://data.usclimatealliance.org/policy/865

Continuing to Advance Bold Climate Action

Resilience

Alliance members are integrating physical climate risk and prioritizing climate adaptation and equity in state planning and decision making to help communities prevent, reduce, withstand, and recover from climate-related impacts and disasters. States, which have varying needs and capacity, will utilize and share best practices to bolster resilience and tailor effective solutions.

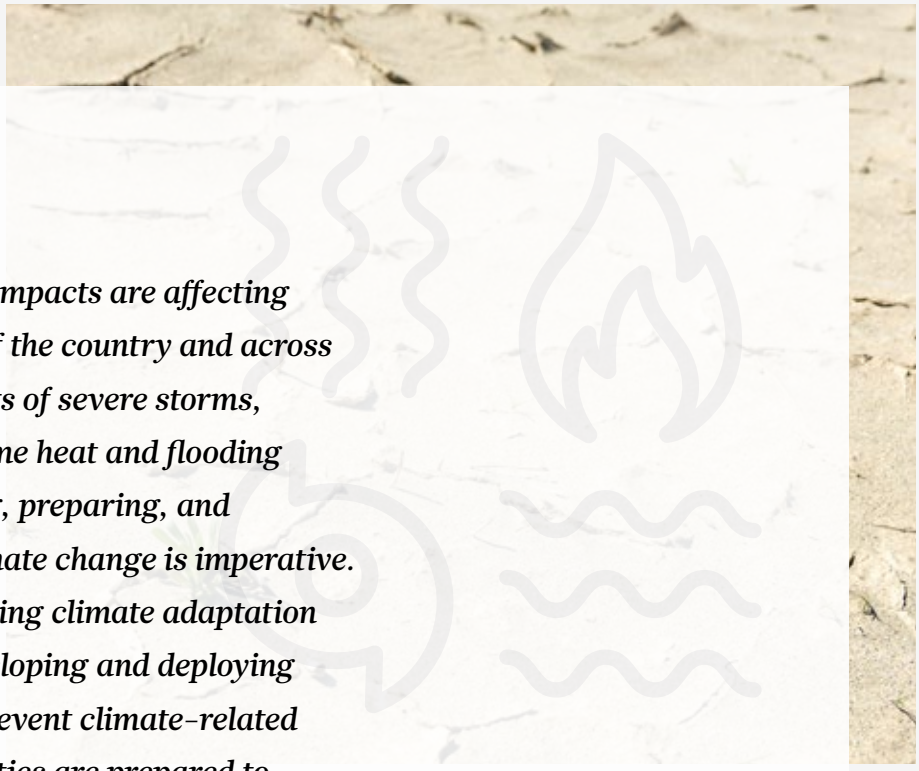
Member Action

The table below includes the number of members that have adopted – or are in the process of adopting – statutory and executive policies and actions. These counts are current as of November 2023.

Policies	# of Members
Resilience or adaptation plans	22
Resilience offices or interagency bodies	17

For the most up-to-date, in-depth breakdown of climate actions across the coalition, explore the Alliance Policy Database.

data.usclimatealliance.org



Resilience

Extreme weather and climate impacts are affecting communities in every region of the country and across the globe. With increasing costs of severe storms, wildfires, droughts, and extreme heat and flooding events, it is clear that planning, preparing, and adapting to the impacts of climate change is imperative. Alliance members are prioritizing climate adaptation and building resiliency by developing and deploying equitable state plans to help prevent climate-related disasters and ensure communities are prepared to withstand and recover from future extreme events.

Resilience: Policies and Actions Across the Alliance

Implementing innovative programs to help fund and finance resilience

Alliance members have made significant strides in planning, implementing, and creatively leveraging funds to advance programs promoting inclusive climate-resilience solutions across their states and territories. These actions will help states achieve their climate goals, create high-quality jobs, and protect communities from the effects of climate change. Examples include:

California: Created the Safer From Wildfires program, requiring property insurers to offer insurance discounts for home and business owners who undertake specified actions to protect homes and businesses from fires.[278]

Colorado: Began grant and loan programs to support sustainable rebuilding after disasters like the Marshall Fire.[279] The programs designated funding for highly efficient homes heated and cooled by electric heat pumps and resilient rebuilding, and launched a multi-agency portal to make navigating recovery benefits more accessible.[280] Colorado is also implementing the FAIR Insurance Plan, which will act as an insurer of last resort to allow residents to insure their homes, businesses, and property — without financial risk or cost to the state.[281]

Maine: Awarded nearly $6.1 million to 103 municipal and Tribal governments through the Community Resilience Partnership since its inception in December 2021, supporting local and regional projects that transition to clean energy, improve energy efficiency, and increase resilience to climate impacts. Since then 174 cities, towns, and Tribal governments in Maine have chosen to participate in the partnership.[282] The state also awarded nearly $20 million in funds to 12 communities through the Maine Infrastructure Adaptation Fund to protect vital infrastructure from the effects of climate change, including sea level rise and flooding associated with large storm events.[283]

Photo credit: Office of Louisiana Governor John Bel Edwards

Massachusetts: Launched the Municipal Vulnerability Preparedness (MVP) 2.0 program, building on its existing program by providing grant funding for communities to revisit resilience priorities. MVP 2.0 fills gaps from the original program and has a greater focus on building social resilience and exploring factors that create vulnerability or resilience in communities.[284]

Michigan: Provided grant funding through the Climate Resiliency and High Water Infrastructure Grant Program for communities to address vulnerabilities presented by severe weather events. The program focuses on local and regional projects that tackle flooding, coastline erosion, urban heat, and stormwater management.[285]

New York: Continued development of an extreme heat action plan with emphasis on reducing risks associated with extreme heat in disadvantaged communities.[286] The interagency work group leading this effort released interim recommendations in summer 2022 and a heat-specific annex to the state's *Comprehensive Emergency Management Plan* in June 2023. A final plan is expected in 2024.[287] In addition, New York voters approved the *Clean Water, Clean Air, and Green Jobs Environmental Bond Act of 2022*, a ballot proposition to make $4.2 billion available for environmental projects to bolster community resiliency.[288] State agencies, local governments, and partners can now access funding to protect water quality, help communities adapt to climate change, improve resiliency, and create green jobs.

Puerto Rico: Launched its Solar Incentive Program with a budget allocation of $90 million, aiming to incentivize solar and battery storage adoption to ensure energy resiliency, reduce electrical service interruptions, and mitigate risks in the event of future disasters.[289]

See more info on the Climate Policy Database:
https://data.usclimatealliance.org/policy/1730

Embedding resilience in state government offices and planning

Bolstering resilience is an ongoing process that requires continuous, evolving efforts. By establishing state offices and senior leadership positions focused on building resiliency across communities, Alliance members are ensuring their own authorities will continue to prioritize climate adaptation and inclusive resilience solutions over time. Alliance members are also taking steps to embed equity, environmental justice, and a just economic transition in state resilience planning. Examples include:

Arizona: Relaunched the Governor's Energy Office as the Governor's Office of Resiliency, which will focus on water, energy, and land use solutions.[290] This office will help coordinate efforts with the many departments, Tribal governments, universities, organizations, and others involved in this endeavor.

See more info on the Climate Policy Database:
https://data.usclimatealliance.org/policy/1384

Colorado: Established the new Governor's Office of Climate Preparedness and Disaster Recovery to add capacity and priority-setting ability within the Governor's Office specifically on climate adaptation, complementing the robust work of the Colorado Resiliency Office within the Department of Local Affairs. In conjunction with the Climate Preparedness Office, the state has established several adaptation leads or offices within its agriculture, parks and wildlife, and natural resources agencies, among others.

Guam: Developed an updated Post-Disaster Watershed Plan in partnership with the U.S. Army Corps of Engineers, published in June 2022.[291] This plan was developed in response to major storm events in 2018 throughout the Pacific Territories (Typhoon Mangkhut in Guam). The plan provides recommendations to improve the resiliency of the island's infrastructure and natural resources to future hazards, including those accelerated by climate change events, with a focus on identifying nature-based solutions.

Photo credit: Edwin Torres, Office of New Jersey Governor Phil Murphy

Louisiana: Enacted legislation that established the first statewide chief resilience officer, a high-level policy position dedicated to enhancing coordination across government to proactively address all types of environmental hazards.[292]

See more info on the Climate Policy Database:
https://data.usclimatealliance.org/policy/208

Maryland: Enacted legislation establishing the Office of Resilience under the Maryland Department of Emergency Management. The office will coordinate across state agencies and entities to coordinate and administer federal prevention, protection, mitigation, and recovery-focused programs; administer state grants and loans; and advance other state and local resiliency strategies.[293]

New Jersey: Launched a project to support 11 Burlington County municipalities in assessing and planning for climate-related hazards, including severe storms and rising temperatures. This project will be operated by New Jersey Department of Environmental Protection's Office of Climate Resilience through its Resilient NJ: Municipal Assistance Program, with support from the New Jersey Coastal Management Program and National Oceanic and Atmospheric Administration.[294]

New York: Appointed the Department of Environmental Conservation's first chief resilience officer, who is responsible for administering the state's $4.2 billion *Clean Water, Clean Air and Green Jobs Environmental Bond Act of 2022*. The chief resilience officer is leading development and implementation of all major components of the program and helping leverage bond act funds to access federal funding opportunities through the IRA.[295]

Puerto Rico: Through Executive Order OE-2023-009, declared an emergency as a result of the effects of coastal erosion and accelerated prevention, mitigation, adaptation, and resiliency measures. The order established the Action Committee for Adaptation and Resiliency in Response to Coastal Erosion to evaluate uninhabited properties and abandoned or ruined structures in coastal zones, and determine which measures to implement in each location.[296]

Rhode Island: Through Executive Order 23-07, re-established the state's chief resilience officer

role. Previously based at the Rhode Island Infrastructure Bank, the chief resilience officer will work within the Department of Environmental Management to develop and lead implementation of the state's climate preparedness strategy.[297]

Washington: Passed legislation that requires local governments to consider climate change and its resulting impacts — such as severe storms, flooding, wildfires, and poor air quality — when developing their comprehensive plans.[298]

Vermont: Established the state's Climate Action Office (CAO) in 2022, which coordinates and provides significant expertise and capacity on state-led climate initiatives, including on resilience and adaptation.[299] To carry out this work, the CAO works closely with staff across the Agency of Natural Resources, other state Agencies, the state climatologist, and key stakeholders such as the Vermont Climate Council.

Identifying and improving resilience metrics to identify best practices

Accurate resilience metrics, indicators, and standards are essential to evaluating a state or territory's climate resilience efforts over time. Alliance members are developing and using these metrics to help strengthen inclusive and equitable resilience planning. Examples include:

California: Developed the *2022 Report: Indicators of Climate Change in California* by collaborating with more than 100 scientific experts and 40 Tribes. This report follows 41 climate change indicators in California, 27 of which have been presented since the first edition of the report in 2009.[300] The findings detail the escalation of the climate crisis across the state with 10 of the 20 largest wildfires in the past 70 years occurring in 2020 and 2021, the last two decades being the driest in the past millennium, glaciers rapidly disappearing, and temperatures up 2.5 degrees Fahrenheit since 1895.

Colorado: Began developing climate and biodiversity metrics through a partnership between the Governor's Office of Climate Preparedness, Department of Natural Resources, and nationally renowned conservation funding program Great Outdoors Colorado. This groundbreaking research and science by leading in-state academic resources will serve as a north-star for conservation and wildlife funding opportunities, as well as a resource for the state's regional natural resources-planning collaboratives and federal lands and recreation managers.

Hawai'i: Provided funding to the State Office of Planning & Sustainable Development to develop a standardized process for assessing the vulnerability of state-managed facilities to sea level rise.[301] This builds on 2021 legislation (Act 178, SLH 2021) that aimed to improve statewide coordination of sea level rise adaptation planning.

Maine: Launched the new Maine Climate Impact Dashboard, providing an interactive look at rising temperatures, heat vulnerability, health impacts, sea level rise, sea level rise vulnerability, economic sector impacts, flood hazard areas, flood vulnerability, and community adaptation and resilience.[302]

New Jersey: Released a scoping document that details a new three-year effort to develop topic-specific resilience action plans, the first of which focuses on extreme heat. These action plans will outline how state agencies will incorporate climate resilience into their policies, programs, and regulations to address climate threats to New Jersey.[303]

Vermont: Finalizing the development of a Municipal Vulnerability Index (MVI), a tool that can be used to support individuals and communities in assessing their preparedness for and resilience to the impacts of climate change. Specifically, the MVI is intended to help identify communities that may be most adversely affected by climate change, focusing on the pressures that climate change will place on Vermont's transportation, electric grid, housing, emergency services, and communications infrastructure, with particular attention to the challenges faced by rural communities across the state in addressing these pressures.

Continuing to Advance Bold Climate Action

Transportation

Alliance members are developing policy pathways and programs to decarbonize the transportation sector by reducing vehicle miles traveled (VMT) and significantly increasing access to and the affordability of zero-emission vehicles, clean fuels, and multi-modal options.

Member Action

The table below includes the number of members that have adopted – or are in the process of adopting – statutory and executive policies and actions. These counts are current as of November 2023.

Policies	# of Members
Clean car standards	15
Clean truck standards	12
VMT reduction goals	09
Clean fuels standards	04

For the most up-to-date, in-depth breakdown of climate actions across the coalition, explore the Alliance Policy Database.

data.usclimatealliance.org

Transportation

The transportation sector has remained the largest source of GHG emissions in the United States, with sectoral decarbonization strategies focusing on expanding access to zero-emission vehicles (ZEVs), electric vehicle (EV) charging infrastructure and low-carbon fuels, and multimodal travel options. This year, Alliance members took action to expand access to cleaner and lower-cost vehicles and infrastructure while reducing VMT, both of which are required to successfully transition to a zero-emission future.

Transportation: Policies and Actions Across the Alliance

Accelerating the transition to cleaner vehicles

Shifting to ZEVs will not only help mitigate GHG emissions; it will also improve health outcomes. Real-world data has shown that as ZEV adoption increases, local air pollution levels and asthma-related emergency room visits drop.[304] To deliver these benefits to their own communities, Alliance members continue to adopt nation-leading standards that will accelerate the deployment of zero-emissions cars and trucks. For example, **Maryland**,[305] **Massachusetts**,[306] **New York**,[307] **Oregon**,[308] **Vermont**,[309] and **Washington**[310] all adopted Advanced Clean Cars II (ACC II) regulations, requiring 100 percent ZEV sales by model year 2035. **Colorado**,[311] **Connecticut**,[312] **Delaware**,[313] **Maine**,[314] **New Jersey**,[315] **New Mexico**,[316] and **Rhode Island**[317] are now all at various stages of ACC II adoption through at least model year 2032. Members are also leading by example and integrating ZEVs into their own fleets, as well as making broader access to ZEVs more affordable. Efforts include:

California: Adopted the Advanced Clean Fleets regulation, mandating manufacturers sell only zero-emission medium- and heavy-duty vehicles (MHDVs) starting in 2036 and requiring state and local agencies to ensure 50 percent of MHDV purchases are zero-emissions beginning in 2024 and 100 percent by 2027.[318]

See more info on the Climate Policy Database:
https://data.usclimatealliance.org/policy/1294

Colorado: Adopted the Advanced Clean Trucks (ACT) rule, requiring manufacturers of MHDVs to sell an increasing percentage of zero-emission trucks as part of their annual sales from model year 2027 and beyond.[319]

Delaware: Passed HB 10, establishing a new target requiring 30 percent of state school bus purchases be fully electric by 2030[320] and HB 12, codifying the state's Electric Vehicle Rebate Program.[321]

Maryland: Passed legislation requiring the state to adopt ACT to coincide with a model year 2027 start,[322] and initiated a rulemaking to adopt the rule.[323] The rule would require manufacturers of MHDVs to sell an increasing percentage of zero-emission trucks as part of their annual sales.

Massachusetts: Expanded its MOR-EV electric vehicle incentive program, offering residents, nonprofits, and businesses rebates up to $3,500 toward the purchase or lease of eligible all-electric and fuel-cell EVs, with an additional $1,500 now available to income-qualifying drivers. It also includes a new point-of-sale rebate program that allows car buyers to take full advantage of their rebates at the time of purchase or lease.[324]

Michigan: Announced $125 million to fund matching grants for school districts to modernize their bus fleets by switching over to electric vehicles.[325]

New Jersey: Became a signatory to the Accelerating to Zero Coalition's Zero Emission Vehicle declaration, a landmark global agreement launched by the United Kingdom at COP26, committing the state to a ZEV future in alignment with Paris Agreement goals.[326]

New Mexico: Through Executive Order 2023-138, required state fleets to be 100 percent zero-carbon by 2035, with limited exceptions, and required state agencies to include EV charging infrastructure in the design and construction of all new state facilities.[327]

North Carolina: Signed Executive Order 271 to accelerate zero-emission MHDV adoption. The order directs the Department of Environmental Quality to begin the rulemaking process required to adopt ACT. It also outlines a comprehensive strategy for the state to support manufacturers, fleet owners, and other partners to grow the zero-emission MHDV market through investment in charging infrastructure,

purchase incentives, workforce development, demonstration projects, technical assistance, lead-by-example initiatives, and other strategies.[328]

Rhode Island: Through Executive Order 23-06, created a light-duty fleet vehicle target requiring state agencies to acquire vehicles such that the light-duty state fleet consists of 25 percent ZEVs by 2030, and increase the total number of EV charging stations at state-owned properties to 200 by 2030. [329]

Vermont: Adopted ACT, which the state estimates will result in more than $600 million of avoided costs related to GHG emissions reductions, and up to $24 million in health-related cost savings.[330]

See more info on the Climate Policy Database:
https://data.usclimatealliance.org/policy/853

Expanding ZEV infrastructure and low-carbon fuels

To successfully transition to cleaner vehicles, Alliance members are focused on delivering a timely and equitable buildout of the EV-charging and hydrogen-fueling infrastructure needed to support the next generation of clean vehicles on the road, including for their own fleets. In addition, Alliance members are working to adopt and implement low-carbon fuel standards to help reduce emissions from internal combustion engine fuels. For example:

Arizona: Announced a first-of-its-kind Cross-Border Electric Trucking Pilot Program with the Mexican state of Sonora to start the process of introducing electric vehicles into the larger international supply chain.[331]

California: Passed a $2.9 billion investment plan focused on building out equitable infrastructure for hydrogen fuel cell vehicles and battery electric vehicles for passenger vehicles, trucks, and equipment, as well as supporting in-state manufacturing, job training, and low carbon fuels production.[332]

Colorado: Released its 2023 EV Plan, which included commitments to work with partners and stakeholder to increase EV infrastructure needed to support state ZEV goals, and to spend nearly $5 million to install charging stations at state facilities and help implement the Electric Vehicle Take Home Policy for state employees.[333]

Delaware: Enacted legislation to improve EV charging infrastructure availability by requiring installation of electrical conduits in new single- and multifamily residential construction.[334]

Hawai'i: Enacted SB1024, establishing long-term goals for zero-emissions transportation in Hawai'i and taking steps to achieve the reduction and elimination of transportation emissions. The bill lays out new plans to both ensure the state's electrical charging capacity is sufficient to support growing use, and develop and implement other options to accelerate the transition to zero-emissions transportation.[335]

Illinois: Enacted the Electric Vehicle Charging Act, which requires making EV-capable parking spaces available for all new single-family homes and new or renovated multifamily residential buildings.[336]

Photo credit: Office of Illinois Governor JB Pritzker

Maryland: Enacted the *Electric Vehicle Charging Reliability Act*, instructing the state's Public Service Commission to allow participating electric companies to install EV charging stations in multifamily dwellings in underserved communities.[337]

Michigan: Launched a series of programs to expand access to ZEV infrastructure across the state for all vehicle types, including the Binational Electric Vehicle Corridor,[338] the State of Michigan Community EV Toolkit,[339] the Mobility Charging Hub program,[340] and the Future Mobility Plan.[341]

New Jersey: Launched an incentive program funded through the Regional Greenhouse Gas Initiative to provide funding for chargers for zero-emission MHDVs, which would support projects operating under community charging and private fleet charging models.[342] New Jersey also approved EV charging programs for make-ready infrastructure with all electric utilities.

New York: Approved beneficial utility rates for EV charging stations to reduce the impacts of demand charges,[343] and initiated a proceeding to implement

polices and develop programs related to medium-and-heavy-duty EV charging infrastructure and planning.[344]

Oregon: Expanded its Clean Fuels Program by requiring fuel suppliers to reduce the average carbon intensity of transportation fuels to 20 percent below 2015 levels by 2030, and 37 percent by 2035. [345]

Rhode Island: Enacted SB 988, requiring that beginning January 2024, any new parking lots or existing parking lots undergoing an expansion of 50 percent or more create designated EV parking spaces. The number of required EV parking spaces is based on the total number of parking spaces and applies to projects receiving any type of public funding.[346]

Washington: Adopted a Clean Fuel Standard, ordering fuel suppliers to gradually reduce the carbon intensity of transportation fuels to 20 percent below 2017 levels by 2034.[347]

Supporting location-efficient development and multimodal transportation

Alliance members are creating incentives, programs, and plans to reduce vehicle miles traveled through measures that equitably increase multimodal access to affordable housing, employment opportunities, and goods and services:

California: Awarded over $352 million in Regional Early Action Planning grants providing planning and implementation dollars to create sustainable, resilient, inclusive, and equitable communities that take strong strides toward reducing VMT.[348]

Colorado: Established a range of new programs to support VMT reduction, including the Strong Communities program to support the adoption of transformational land use reform practices, programs, and policies that support sustainable development patterns and affordable housing into the future.[349]

Connecticut: Published its *2030 VMT Goal and Strategies Plan*, which sets a 5 percent reduction in VMT per person by 2030 from a 2019 baseline through measures such as increasing active transportation, transit frequency, transit access, transit-oriented development, and trip-reduction programs.[350]

Hawai'i: Opened applications to the Hawai'i Electric Bike and Moped Rebate, making rebates up to $500 available for the purchase of new electric bicycles and electric mopeds.[351]

Maine: Established the Workforce Transportation Pilot program, a $5 million program providing competitive grants to local and regional partnerships, with a focus on rural areas, to pilot innovative ways to connect workers and employers through ridesharing, vanpools, and other subsidized transit options.[352]

Minnesota: Released its *Statewide Multimodal Transportation Plan*, committing to decrease annual GHG emissions from the transportation sector 80 percent by 2040 and reduce VMT across the state per capita 14 percent by 2040.[353] To help meet these targets the state also passed HF 2887, which invests in public transportation across Minnesota and requires developing a transportation-emissions impact assessment and statewide e-bike incentive program.[354]

See more info on the Climate Policy Database:
https://data.usclimatealliance.org/action/1090
https://data.usclimatealliance.org/action/1402

Washington: Passed HB 1181, which compels local governments to incorporate climate action and resilience into comprehensive plans by reducing GHG emissions and per-capita VMT while prioritizing environmental justice to avoid worsening environmental health disparities.[355]

HIGHLIGHTING SOLUTIONS
across the alliance

In May, Michigan Governor Gretchen Whitmer joined Secretary of Transportation Pete Buttigieg, Canadian Minister of Transport Omar Alghabra, and Mayor Mike Duggan in Detroit to announce the first Binational Electric Vehicle Corridor between the U.S. and Canada.

Photo Credit: Office of Michigan Governor Gretchen Whitmer

Collaborating Across Government to Speed America's Net-Zero Transition

Since President Biden took office, the Alliance has forged a robust state-federal partnership to advance and accelerate climate solutions across levels of government. This partnership has led to historic climate action over the past three years, including restoration of states' authority to set stringent clean car standards, the phase-down of harmful hydrofluorocarbons, new collaborative initiatives to advance states' procurement of low-carbon construction materials and decarbonize buildings, and much more.

Perhaps most significantly, President Biden signed the IRA into law in 2022, concluding a historic legislative session that resulted in the largest investment in climate in U.S. history. The law's enactment followed public calls by Alliance governors for Congress to pass a bold climate and clean energy package, recognizing that states and territories cannot act alone to meet the nation's climate goals. While Alliance members had already been developing and implementing crucial climate policies and programs in their state capitals, passage of the IRA — paired with significant climate infrastructure investments passed by Congress in 2021 — marked the beginning of a transformative chapter in U.S. climate action.

States, territories, and the federal government still have much more work ahead. Transforming these historic investments into meaningful action is an all-hands-on-deck effort. And, as Alliance governors laid out in a letter to the President at the beginning of 2023, additional action is needed using the federal government's executive and regulatory powers to put our nation on path to meet U.S. emissions reduction targets. Throughout the year, the Alliance has continued to partner closely with the Biden administration to support continued prompt, effective deployment of federal executive authority across more than 20 specific recommendations laid out by the Alliance for federal climate action.

As benefits of the IRA and IIJA become fully realized over time, Alliance states and territories will continue to work collaboratively alongside the federal government to implement federal funds locally, advance shared climate goals, and work toward a net-zero future.

Maximizing the climate benefits of historic federal funding and programs

With trillions of dollars in new spending on domestic energy security and climate action set to be delivered through the IRA, IIJA, and the CHIPS and Science Act over the next decade, Alliance members have an unprecedented opportunity to supercharge climate leadership at the state and territorial level. The IRA in particular makes meaningful investments in state-led climate action, providing critical

resources for states and territories to accelerate their GHG emissions reductions, including:

- $8.5 billion for state energy offices to help consumers retrofit and electrify their homes through new Home Energy Rebate Programs.
- $7 billion for states and other entities to increase access to affordable, resilient, and clean energy solar energy for low-income households through the Greenhouse Gas Reduction Fund's Solar for All program.
- $5 billion for states, territories, municipalities, and Tribal governments to develop and implement plans to reduce climate pollution through Climate Pollution Reduction Grants.
- $1 billion for state and local governments to adopt building energy codes, including $670 billion for zero-energy codes.
- $5 million for states to adopt and implement clean vehicle standards.

Deployment of these resources, along with key funds from IIJA, will be key to putting the U.S. on path to achieve its climate goals by the end of the decade. As primary implementers of both laws, states and territories are essential to delivering on their promise.

This year, Alliance states and territories began taking intentional steps to harness these investments to build healthier communities and tackle the climate crisis.

Governors across the coalition are increasing the staff capacity of their offices and state agencies to manage the influx of federal dollars from IRA and IIJA; providing whole-of-state-government direction to their agencies to prepare for formula funding opportunities; standing up new governmental structures aimed at capturing private and public financing and maximizing emission-reducing investments; working with private companies to secure new wind, solar, battery, EV, and other manufacturing projects that will support the creation of good-paying jobs; and forging innovative partnerships with the federal government to build the clean energy workforce of the future. Alliance members will continue leading in efforts to implement these funds at the state and territorial level effectively, efficiently, and equitably (Box 4).

A key program that every Alliance member is using to reduce harmful air pollution and accelerate emissions reductions is the Climate Pollution Reduction Grants (CPRG) program. These multi-million-dollar investments under IRA are empowering states and territories across the country to bolster their economy-wide and sector-specific state climate planning efforts. In 2023, all Alliance members submitted their notices of intent to participate in the CPRG program, and captured more than $70 million collectively in federal funds to develop and update state and territorial climate and clean energy plans. Throughout the year, Alliance members have been collaborating, sharing best practices, and scaling up proven solutions to maximize the historic opportunity afforded by these planning grants, with an eye toward finalizing Priority Climate Action Plans and submitting competitive applications for CPRG implementation grants — the second phase of the program — in early 2024.

BOX 4

Scaling Impact

Examples of Alliance Member IIJA and IRA Successes

Michigan mobilizes for federal funds

In response to the passage of the IIJA, IRA, and CHIPS and Science Act, Michigan has aggressively mobilized to secure federal funding opportunities, particularly to implement the state's landmark MI Healthy Climate Plan. This mobilization included creating the Michigan Infrastructure Office (MIO), the state's federal funding coordinating office; signing executive directives to prepare state agencies for formula-funding opportunities; and creating and convening a dedicated subcabinet and topical working groups to address challenges, discuss key decisions, and ensure that staff coordinates as efficiently as possible, including one role devoted exclusively to climate and energy-funding priorities. Governor Whitmer also proposed and secured $337 million for the Make it in Michigan Competitiveness Fund, which is intended to provide enabling funds to unlock federally backed investments. In addition, MIO launched a technical assistance program to help communities leverage federal funding opportunities by providing support, planning, and matching grants to connect locals, Tribal governments, and other eligible entities with consulting services to help identify, apply for, manage, and administer federal grant funding.

Pennsylvania spearheads workforce transformation

Pennsylvania Governor Josh Shapiro announced the Commonwealth Workforce Transformation Program (CWTP), a first-of-its-kind program created via Executive Order 2023-17 in August 2023 to bolster and expand its infrastructure workforce. Under the program, the commonwealth will reserve 3 percent of IRA and IIJA funding received from the federal government specifically to promote workforce development and on-the-job training, leading to as much as $400 million being invested directly in training Pennsylvania's workers over the next five years. Importantly, organizations within the commonwealth receiving IRA and IIJA funding are also eligible to receive up to $40,000 for each new worker trained. The program is expected to support as many as 10,000 jobs by preparing Pennsylvanians for next-generation infrastructure jobs, including those modernizing energy, water, and sewer infrastructure.

BOX 4 Continued

New Mexico unleashes wind and solar manufacturing power

Belen, New Mexico, is the future site of Arcosa, Inc.'s newest wind-tower manufacturing facility. Fueled by IRA incentives, Arcosa bought an extant facility in Belen's Rio Grande Industrial Park and intends to create over $314 million in economic impact for the area in the next decade — creating a New Mexico-grown wind-tower supply chain to build wind farms all over the Southwest. Belen is just the beginning of clean energy manufacturing in New Mexico: in August 2023, Governor Lujan Grisham, along with the state's federal delegation and the mayor of Albuquerque, celebrated the announcement of Maxeon Solar Technology's $1 billion investment in a solar cell and panel manufacturing center in Mesa del Sol, near Albuquerque. The new factory will create more than 1,800 domestic jobs in clean energy manufacturing and engineering, further demonstrating how New Mexico has capitalized on the job-creating provisions of the IRA, private investment, and the state's commitment to the clean energy transition.

Colorado welcomes IRA investment boom

In August 2023, Colorado Governor Polis joined the state's federal lawmakers to mark the one-year anniversary of the IRA in Brighton, Colorado, the site of a surge in private-sector investment since passage of the landmark legislation. Following receipt of an offer of state incentives from the Colorado Economic Development Commission, solar manufacturer VSK Energy Inc. announced its intent in June 2023 to invest $250 million in a new solar photovoltaic module assembly facility in the Denver suburb. The investment will add to Colorado's $4.6 billion cleantech economy, according to the Colorado Office of Economic Development and International Trade, and is projected to bring 900 net new jobs. Other private investments include Ampirus establishing a new lithium-ion manufacturing facility in Brighton, Fortesque Future Industry selecting Colorado for its clean hydrogen innovation center, and CS Wind doubling its wind tower facility in Pueblo. Governor Polis cited tax credits made possible by the IRA as a significant driver of these ventures as well as an overall growth in clean energy and manufacturing projects throughout Colorado.

BOX 4 Continued

Oregon bolsters climate action workforce

In 2023, Oregon broadened its climate action workforce to prepare for the expected influx of 171 million federal-formula dollars made available through IIJA and IRA. By building staff capacity, the Oregon Department of Energy (ODOE) would engage more frequently and meaningfully with communities to ensure the federally funded programs will best serve Oregonians, especially those in traditionally underserved communities. This included adding new staff members with specialized expertise, such as a federal grants officer for the state's IIJA Grid Resilience Program and a new community navigator program staff member that will provide enhanced outreach and help environmental justice communities (including Tribes, rural areas, low-income areas, and communities of color) access dollars and technical assistance for energy projects. At the same time, the ODOE-supported Oregon Global Warming Commission — soon to be called the Oregon Climate Action Commission — will be bolstered with expanded membership, including a representative with environmental justice experience, a youth representative, and the directors of additional state agencies to enhance the state's whole-of-government approach. ODOE will continue to bring on additional procurement, human resources, management, equity, and policy positions in preparation for anticipated federal funding.

Recommending federal executive actions to speed America's net-zero transition

The Alliance kicked off 2023 by calling on the Biden administration to advance a series of additional federal climate actions through the remainder of the president's term that will support states and accelerate the nation's transition to a net-zero future. Using their collective voice, Alliance members laid out in a letter to President Biden more than 20 specific actions the federal government can take using its executive and regulatory authority to cut emissions across sectors, empower climate-leading states, advance environmental justice, increase resilience, and lower energy costs. Top priorities included:

- Strengthening federal light-, medium-, and heavy-duty vehicle standards by adopting GHG emissions and fuel economy standards before 2024.
- Empowering states to set more stringent vehicle emission standards by approving California waiver requests under the *Clean Air Act*.
- Tackling GHG emissions from industrial facilities and electricity generation by rapidly adopting new standards under the *Clean Air Act*.
- Reducing harmful pollutants from buildings by establishing strong emissions-based standards for space and water heating equipment.
- Developing the first national adaptation strategy to ensure that climate resilience is embedded across all regions and sectors.

These and other recommendations reflect the Alliance's ongoing commitment to a strong, interconnected national climate framework that builds on both federal and state leadership to confront the climate crisis. Since the letter was sent, the Biden administration has advanced several crucial efforts in alignment with Alliance members' recommendations, including proposed rules strengthening vehicle emission and fuel economy standards, waivers affirming the authority of states to tackle heavy-duty truck pollution, and proposed rules targeting GHG emissions in power plants. The letter will continue to provide a foundation for collaboration and engagement with the federal government as Alliance governors work to raise federal ambition and ensure a stringent federal floor in the coming year.

Over the course of 2023, Alliance members also provided detailed recommendations on the development of federal programs, policies, and regulations through coalition-wide and multi-state letters to federal agencies. These comment letters included:

- Letter providing input on design and deployment of IRA's Climate Pollution Reduction Grants.[356]
- Letter encouraging an update to the federal government's Social Cost of Greenhouse Gases estimates.[357]
- Letter calling for stringent final vehicle emission standards.[358]
- Letter supporting the rapid finalization of strengthened power plant rules.[359]

Photo credit: U.S. Climate Alliance

Photo credit: U.S. Climate Alliance

Working together to increase collective ambition

As the end of President Biden's term nears, the coalition's partnership with the federal government is stronger than ever. Both the Biden administration and Alliance governors agree that achieving the nation's climate goals at the scale and speed necessary requires bold and immediate action at the state, territorial, and federal levels. To deliver on their shared ambition, they have forged new and innovative partnerships in 2023 and brought top officials from Alliance states and territories together with federal leaders to collaborate on, scale up, and inform innovative climate solutions to make our common 2030 and 2050 targets a reality (See Box 5).

BOX 5

State and Federal Collaboration

Federal-State Buy Clean Partnership

Thirteen Alliance states joined with the Biden administration in launching the Federal-State Buy Clean Partnership in March 2023. In joining the partnership, these states committed to prioritize efforts that support procurement of lower-carbon infrastructure materials in state-funded projects, and to collaborate with the federal government, and one another, to send a harmonized demand signal to the marketplace. As part of this initiative, the Alliance Secretariat announced the availability of policy, technical, and analytical assistance to help participating members advance state-level Buy Clean efforts. This announcement built on a White House convening[360] with top officials from Alliance states hosted in October 2022 to explore opportunities to partner on Buy Clean efforts.[361]

Spring Semiannual Meeting

As part of the Alliance's Spring Semiannual Meeting, officials from 22 Alliance states and territories engaged with top leaders from EPA, the White House Climate Policy Office, and the White House Council on Environmental Quality to discuss state and federal climate solutions. Biden administration officials conveyed the latest updates on plans to tackle emissions from power plants, federal efforts on a national resilience strategy, Justice40 implementation, and the White House perspective on the state of the state-federal partnership.

NWL National Learning Lab 2023

During the Alliance's NWL National Learning Lab, representatives from 23 states and territories came together to engage with each other and federal agencies, sharing opportunities and challenges related to implementing IRA and IIJA across NWLs. Key agency representatives briefed state and territory officials on the Biden administration's strategy for conserving the nation's lands and waters, increasing our nation's resilience, and offsetting collective GHG emissions. Under Secretary of Agriculture for Farm Production and Conservation Robert Bonnie also highlighted the critical role that states and territories play in partnering with the federal government to implement natural climate solutions.

White House Buildings Convening

State officials from 24 Alliance states and territories joined a White House convening focused on state and federal efforts to decarbonize buildings.[362] Key outcomes include a shared focus on pathways to accelerate progress through federal-state partnership, federal recognition of states' unique opportunity to lead in reducing building-related emissions, opportunities to use federal funds under IRA and IIJA, and technical resources to support state efforts to reduce energy use and create jobs. The White House specifically highlighted the creative policy pathways and innovative programs in Maine and Louisiana focused on heat pump deployment and energy building codes.[363]

Looking Ahead to 2024 and Beyond

As unprecedented wildfires, record heat, and catastrophic flooding swept across the country this year, Alliance governors were reminded of the crisis facing their states and territories and the urgency of their work. Taking stock of the progress made towards the coalition's collective climate goals is critical to assess what actions are working and where increased ambition may be necessary. According to the latest analysis, the Alliance is on track to achieve its 2025 GHG emissions reduction target, thanks to state policies and historic federal funding and programs that have been enacted over the last two years. These actions have also helped cut down the gap towards achieving the Alliance's 2030 and 2050 targets. While significant work remains to close that gap in the coming years, there is a clear pathway for Alliance states and territories to achieve net zero.

These targets represent more than numbers — they represent the lives and livelihoods of millions of Americans who are facing more extreme, climate change-driven disasters than ever before. Achieving collective climate goals means ensuring all workers and families are better protected from the worsening impacts of climate crisis, making communities more resilient to future extreme weather events expected under current warming conditions, and delivering more public health and economic benefits beyond what Alliance members have already achieved. While current progress is encouraging, more action is urgently needed across all sectors of the economy to make these goals a reality. With this in mind, and with renewed resolve and focus, Alliance members will continue working with one another and the federal government to take the next generation of actions to ensure a safe and healthy planet for all.

Appendix I: Decarbonization Scenario Analysis

The U.S. Climate Alliance commissioned analysis from Energy and Environmental Economics, Inc. (E3) to analyze possible trajectories for Alliance-wide GHG emissions through 2050. The E3 analysis was conducted using the PATHWAYS model with electricity sector analysis informed by the National Renewable Energy Lab 2022 Standard Scenarios. This appendix details the modeling methodology and scenario assumptions used in the analysis.

PATHWAYS Model

PATHWAYS is an economy-wide energy demand and greenhouse gas (GHG) emissions accounting model that tracks all annual final energy consumption and GHG emissions sources and sinks. PATHWAYS takes a "bottom-up" approach, meaning it accounts for changes in demand for energy services and changes to the efficiency and fuel type of equipment used to meet those service needs in order to endogenously calculate final energy demand. Users translate policies and technology trends into scenario inputs that determine changes in physical infrastructure and energy consumption patterns, and the model then quantifies the effect of those changes on overall economy-wide GHG emissions. PATHWAYS uses a stock rollover approach in order to accurately capture the effects of policies like vehicle fuel economy standards (CAFE standards), building energy efficiency codes, and adoption of zero-emission vehicles (ZEV) over time (see Figure 1). PATHWAYS tracks the lifetime of installed building equipment and vehicles and provides useful results such as annual sales of zero-emissions vehicles required to meet a ZEV target, annual reductions in energy demand from increased adoption of efficient building shells, and total electricity demand by sector from both existing devices and new electrification loads. In addition, PATHWAYS produces liquid and gaseous fuel demands that are used as inputs to the low-carbon fuels and negative emissions technology (NET) module, which optimizes the production of biomass-based and synthetic low-carbon fuels and deployment of NETs based on biomass feedstock supply, energy prices, and emissions targets.

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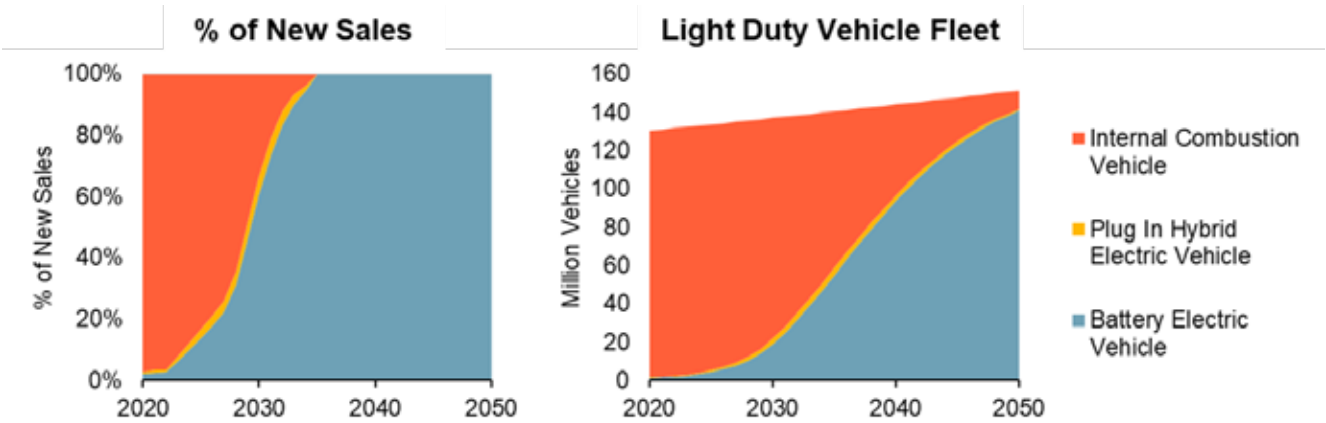
FIGURE 1. Example of PATHWAYS Model Stock Rollover Functionality for Light-Duty Vehicles



The E3 PATHWAYS model includes a representation of the following sectors:

- Residential buildings
- Commercial buildings
- Industry
- Transportation
- Non-energy/non-combustion sectors
  - Agriculture
  - Industrial processes and product uses (IPPU)
  - Coal mining and abandoned mines
  - Natural gas and oil systems
  - Solid waste and wastewater
  - Land-use, land-use change, and forestry (LULUCF)

PATHWAYS includes a stock rollover representation for 16 residential building sectors such as space heating, water heating, and lighting; nine commercial building sectors; and six on-road transportation sectors including light-duty automobiles, heavy-duty trucks, and buses. Other consuming sectors like industrial energy demand and aviation are accounted for with total annual energy consumption by fuel and total annual emissions by pollutant. The default geography for the U.S. PATHWAYS model is the nine U.S. census divisions, with state level inputs aggregated and weighted based on historical economic activity, energy consumption, and GHG emissions. For this analysis, E3 modeled eight regions representing only the U.S. Climate Alliance states in each census division (no states in the East South Central census division are currently members of the Climate Alliance). The list of modeled states by census division is below:

Census Division	Alliance Members Modeled
New England	CT, ME, MA, RI, VT
Middle Atlantic	NJ, NY, PA
East North Central	IL, MI, WI
West North Central	MN
South Atlantic	DE, MD, NC
East South Central	None
West South Central	LA
Mountain	AZ, CO, NM
Pacific	CA, HI, OR, WA

Electricity sector approach

Electricity sector costs and emissions for this analysis leveraged the NREL 2022 Standard Scenarios,[364] NREL Annual Technology Baseline (ATB),[365] and *EIA Annual Energy Outlook 2023 (AEO).*[366] State-level outputs for electricity capacity and generation by resource from the NREL Standard Scenarios were combined with capital costs for generating resources from ATB, transmission and distribution cost escalators from AEO, and fuel prices from AEO to yield an annual electricity emissions rate and average retail price for each scenario. The Reference scenario used capacity and generation outputs from the NREL Mid-case with Current Policies, which includes IRA incentives and binding state electricity policies like renewable portfolio standards or clean electricity standards. The Collective Action scenario used capacity and generation outputs from the NREL High Demand case with 100% net-zero emissions by 2035, with adjustments made so that the achievement of 100% was delayed until 2050 and to replace unabated natural gas combined-cycle plants with combined-cycle with carbon-capture-and-storage (CCS) plants and unabated natural gas combustion turbine plants with renewable gas combustion turbine plants. The resulting annual electricity emissions rate and average retail price of electricity were then combined with annual electricity demands from PATHWAYS to determine total electricity sector costs and emissions.

Approach to Modeling Puerto Rico and Guam

Emissions from Puerto Rico and Guam were modeled outside of the stock-rollover and energy demand accounting of PATHWAYS. Base year emissions for these territories came from the ClimateDeck,[367] which had emissions estimates for the transportation and electric power sectors. This study assumed that sectoral emissions in Puerto Rico and Guam followed the same trend as emissions for the Alliance as a whole for each scenario modeled. Puerto Rico and Guam are included in Alliance-wide emissions results, but are not reflected in other modeling outputs such as the costs and benefits analysis.

Scenario Inputs

The U.S. Climate Alliance designed four scenarios of Alliance-wide GHG emissions:

1. Reference Scenario: Includes existing and final statutory/regulatory measures in Alliance states as of June 1, 2023, but no new policies.

2. Federal Action Scenario: Includes potential additional regulatory action at the federal level to further reduce GHG emissions.

3. Collective Action Scenario: Alliance states and/or the federal government take a suite of ambitious actions to achieve 50 percent below 2005 levels by 2030 and net-zero GHG emissions by 2050.

4. Existing GHG Targets Scenario: Alliance members put additional policies and actions into place to achieve their individual GHG emissions reduction goals.

Detailed input assumptions for each of these scenarios are described in the sections that follow.

Reference Scenario

The Reference Scenario is designed to align with key drivers and outputs (such as population or VMT growth) from EIA AEO 2023 at the national level. This scenario reflects a 'business-as-usual' future with no new policies but includes existing state and federal statutory/regulatory measures as of June 1, 2023, including the IRA, with additional state-specific adjustments made based on input from Alliance members.

Sector	State Policy
Electricity generation	RPS, CES, resource mandates as modeled by NREL 2022 Standard Scenarios Current Policies scenario
Transportation	ACC II / LEV IV
	ACC I / LEV III
	Low-carbon fuel standard
	Medium- and heavy- duty ZEV policy
	Zero-emission bus mandate
Industry and buildings	Energy Efficiency Resource Standards
Buildings	State building codes
	Building performance standards
HFCs	State HFC phasedowns
Oil & gas	State oil and gas methane regulations
Waste & agriculture	Landfill methane regulation and agricultural methane targets
LULUCF	Rate of change in the net land sink equivalent to the "Low Sequestration" baseline projection in the 2021 National Communication & Biennial Report[368]

Federal Action Scenario

Building on the Reference Scenario, this scenario includes potential additional regulatory action at the federal level to further reduce GHG emissions.

Wedge	Input Assumptions
Power plant emissions standards	Proposed EPA emissions standards for power plants[369] (impacts based on EPA's RIA)[370]
GHG emissions standards for passenger vehicles	Proposed EPA light- and medium-duty vehicle GHG emissions standards[371]
GHG emissions standards for heavy trucks	Proposed heavy-duty vehicle GHG emissions standards[372]
Aviation decarbonization	Biden administration target of 3 billion gallons of sustainable aviation fuel by 2030[373] (~13% blend)
Emissions standards for trains and locomotives	Railroads must run locomotives in a zero-emission configuration by 2035 (based on locomotive diesel consumption in regulatory impacts analysis for California rule)[374]
Building decarbonization	Proposed federal appliance efficiency rules for lighting,[375] residential gas furnaces,[376] room ACs,[377] and clothes dryers[378]
Oil and gas	Proposed methane venting, leaking, and flaring regulations (based on EPA RIA)[379] and PIPES Act Proposal Modernize Decades-Old Pipeline Leak Detection Rules[380]

Collective Action Scenario

Building on the Federal Action Scenario, this scenario quantifies the impact of policy actions that the collective Alliance members and/or the federal government could take to achieve 50 percent below 2005 levels by 2030 and net-zero GHG emissions by 2050.

Wedge	Input Assumptions
Zero-carbon new construction	Starting in 2035, all new residential and commercial buildings will be all-electric with high efficiency shells and appliances.
Existing buildings Decarbonization	Zero-emissions equipment sales starting in 2035 (all fossil-burning devices being replaced with electric device upon retirement), building shell retrofit targets from ACEEE Halfway There report[381] (65% of residential buildings, 80% of commercial buildings by 2050)
LDV VMT reductions	VMT per-capita reductions of 4% by 2025, 8% by 2030, 11% by 2035, and 14% by 2040 (based on MN Statewide Multimodal Transportation Plan[382] and other state targets)
LDV ZEVs	100% ZEV sales by 2035 (based on ACC II) [383]
MHDV ZEVs	ACT ZEV sales through 2035, increasing to 100% ZEV sales by 2040 for all MHDVs
Industrial energy efficiency and activity reduction	Subsector-specific energy-efficiency improvements based on Worrell & Boyd, 2022,[384] NREL Industrial Energy Tool,[385] and DOE *Industrial Decarbonization Roadmap*[386]
Industrial electrification	Subsector-specific electrification potential identified by Worrell & Boyd, 2022, DOE *Industrial Decarbonization Roadmap*, NREL Electrification Futures Study,[387] and Global Efficiency Intelligence electrification studies[388,389]
Industrial H2 fuel-switching	Subsector-specific hydrogen fuel-switching modeled by DOE *Industrial Decarbonization Roadmap*, Renewable Thermal Collaborative *Assessment of Green Hydrogen for Industrial Heat*[390]
Industrial CCS	Subsector-specific CCS deployment modeled by DOE *Industrial Decarbonization Roadmap*
HFCs	Achievement of 40% reduction below 2013 levels by 2030 (aligned with California target)
Agriculture and waste	Reductions available below $50/tCO$_2$e from 2022 EPA Non-CO$_2$ Mitigation by state report[391]
Oil & gas fugitives	Maximum methane abatement potential from Ocko et al., 2021[392]
Coal mine methane abatement	Reductions available below $50/tCO$_2$e from 2022 EPA Non-CO$_2$ Mitigation by State report
Low-carbon drop-in fuels	Alliance population-weighted share of national waste and residue feedstocks from DOE Billion Ton Report[393] converted to advanced renewable drop-in fuels
Natural and working lands	Increase in net land sink based on “High Sequestration” projection from White House 2021 Biennial Report (~50% increase)[394]
Negative-emissions technologies	Negative emissions from CO$_2$ captured during biorefining process and direct air capture used to offset remaining gross emissions in 2050 beyond those offset by natural sinks

GHG Targets Scenario

The State GHG Targets scenario calculates the impact of states achieving their individual targets:

Year	States/Territories with Included GHG Targets
2024	PR
2025	CO, LA, MA, MD, MI, MN, NC, PA
2030	CA, CO, CT, DE, HI, LA, MA, ME, MD, NC, NJ, NM, NY, RI, VT, WA
2031	MD
2035	CO, OR
2040	CO, MA, RI, WA
2045	CA, CO, HI, ME, MD
2050	CO, CT, DE, LA, MA, ME, MD, MI, MN, NC, NJ, NM, NY, OR, PA, RI, VT, WA

Costs and Benefits

PATHWAYS accounts for annual spending on fuels, energy-efficiency measures, capital costs for energy-consuming devices, and non-energy mitigation measures. In this analysis, the economy-wide costs of the Collective Action scenario can be compared to those of the Reference scenario to evaluate the relative costs of achieving the Alliance's climate goals. In addition to direct costs, the model also includes an evaluation of health and climate benefits using EPA tools and guidance. These benefits are critical to include when evaluating the net costs and benefits of decarbonization. The table below lists the major costs and benefits categories in PATHWAYS the source for assumptions used for each.

Cost/Benefit Category	Source
Building equipment costs	Internal E3 analysis of equipment prices and program cost data for space heating and water heating devices, EIA National Energy Modeling System (NEMS) for all other building end uses[395]
Vehicle costs	International Council on Clean Transportation (ICCT) for light duty vehicles,[396] Argonne National Laboratory for medium and heavy duty[397]
Fossil fuel prices	EIA Annual Energy Outlook (AEO) 2023 Reference case[398]
Electricity costs	NREL ATB for capital costs, EIA AEO for fuel prices
Biofuel/H2/synthetic fuel prices	Internal E3 analysis based on feedstock prices, conversion equipment cost, and electricity prices
Negative-emissions technology costs	Fasihi et al., 2019[399]
Non-energy mitigation costs	EPA *U.S. State-level Non-CO_2 GHG Mitigation Report*[400]
Health benefits	EPA CO-Benefits Risk Assessment Health Impacts Screening and Mapping Tool (COBRA)[401]
Climate benefits	EPA Report on the Social Cost of Greenhouse Gases: Estimates Incorporating Recent Scientific Advances[402]

Note that the costs and benefits analysis excludes Puerto Rico and Guam due to a lack of data for these territories. Hawai'i was excluded from the health benefits analysis because there is no data for Hawai'i in the EPA COBRA tool. However, Hawai'i was included in the other cost and benefit calculations for direct costs and climate benefits.

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